

PACIFIC PULP & PAPER INDUSTRY

Volume 4
Number 12

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**Highest Value
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The TACOMA ELECTROCHEMICAL COMPANY is ideally located to render efficient service to the growing needs of the pulp and paper industry.

Modern shipping facilities under the direction of an experienced organization assures prompt and efficient deliveries.

We are in a position to supply promptly Liquid Chlorine and Caustic Soda from our Tacoma plant and other industrial chemicals manufactured by the Pennsylvania Salt Manufacturing Company.

*Acids
Alums
Aluminas
Caustic Soda
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TACOMA ELECTROCHEMICAL CO. TACOMA WASHINGTON.

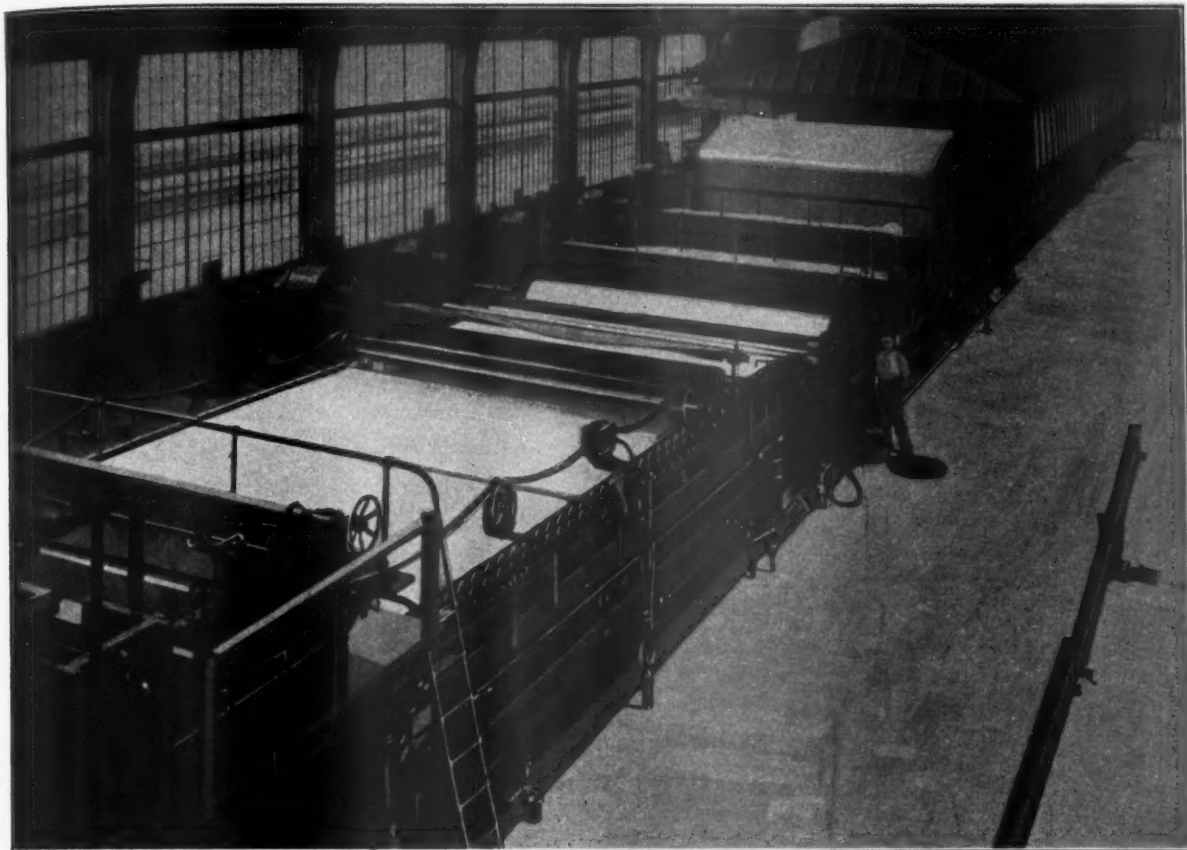
A SUBSIDIARY OF THE PENNSYLVANIA SALT MANUFACTURING CO.

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WORLD'S LARGEST BOND MACHINE

THE bond machine of the Gray's Harbor Pulp & Paper Co. of Hoquiam, Wash. is said to be the world's largest and fastest bond paper machine.

It has a wire 202 inches wide, a speed of 1,000 feet per minute, and a capacity of 50 tons daily.

Management Bond, a product of the Hammermill Paper Company is made here.

This machine uses a Beloit-built High-Speed Shake and Removable Fourdrinier, a combination unexcelled for making fine papers at high speeds and on wide machines.

Mill executives interested in getting large production at low cost of bond, kraft, book, tissues or specialties, are invited to investigate the adaptability of the Beloit High-Speed Shake for their needs.

A letter will bring you particulars.

The Beloit Way is the Modern Way

BELOIT IRON WORKS • • BELOIT-WIS. U.S.A.

HIGH-SPEED SHAKE
The BELOIT



As each new paper machine goes into operation older machines find themselves relegated further and further down the list in production and profit. Eventually they will become 100 per cent obsolete; but while they still are in good mechanical condition and can be altered to meet the needs of 1930, let us show you what *modernization* can accomplish.

**If you can make a profit
in 1930 with 1916 paper
machines, think what the
profits must be for mills
with up-to-date equip-
ment!**

**Pusey
and
Jones**



THE PUSEY AND JONES CORPORATION, WILMINGTON, DELAWARE, U. S. A., Builders of PAPER MAKING MACHINERY; for NEWS : BOOK : KRAFT : BOARD : : Working For, and in Technical Co-operation With, the Forward-Thinking Minds of the Industry : Since 1848 : The MARK, shown here, will be found on Every Casting, and on every Other Part of major Importance, in every Machine produced by This Company : : It is the Mark of Our Own Technical Standards : : A mark of Superior Quality.

When writing to PUSEY & JONES CORPORATION please mention PACIFIC PULP AND PAPER INDUSTRY

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*Crane pressure regulator No. 960*

Allotting power to lighter duty

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To stem this Crane Co. has developed its pressure regulators. Bottling up pressures at their sources, they automatically release, into service lines, the exact amount of steam or air required.

Typical of Crane engineering is their

simple operation. They only require their hand wheels to be turned to the proper point and locked in place. Typical of Crane products is their service. Sensitively, accurately, their diaphragms feel the slightest pressure drop on the service side and send impulses back to increase the pressure flow.

For complete information concerning the operation, the service, and the savings Crane pressure regulators will achieve, write Crane Co.

Valves



CRANE



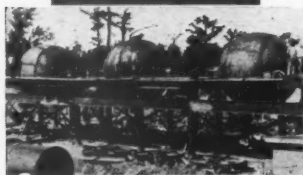
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CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO
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The Biggs Erecting Organization Is As Important To You As Biggs' Fabricating Facilities



Typical Biggs Installations

Top—Biggs Welded Rotary Digester.
Second—Biggs Riveted Rotary Digesters.
Third—Biggs Standard Cylinder Rotary Bleaching Boilers.
Bottom—Biggs Tumbling Digester.

"Built by Biggs"

Welded Globe Rotary Digesters
Riveted Globe Rotary Digesters
Cylinder Rotary Bleaching Boilers
Tumbling Digesters, Welded or Riveted
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Penstocks
Welded or Riveted Steel Plate Construction of Every Description

Biggs Electrically Welded Vessels are accepted for installation in localities where the A.S.M.E. code has been adopted for unfired pressure vessels.



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BIGGS has fabricated and erected paper-making equipment for such leaders in their industry as the Hinde & Dauch Paper Company of Sandusky, Ohio; the Celotex Company, New Orleans; the National Biscuit Company; the Harriman Company, Lynchburg; the Kalamazoo Paper Company of that city; the Standard Paper Manufacturing Company of Richmond; the Sylva Paper Board Company, Sylva, N. C.; Ball Brothers, Noblesville, Ind.; the River Raisin Paper Company, Monroe, Mich.; the Consolidated Water

Power & Paper Company, Appleton, Wis., and many others.

Biggs globe and cylinder rotary digesters are standard the world over. Biggs Welded Equipment has won the same confidence as has long been accorded Biggs riveted construction. The Biggs weld is absolutely "stronger than the plate itself". Biggs Welded Digesters have practically eliminated maintenance costs.

Inquiries relating to your present or future requirements will be handled with a promptness which is a part of Biggs service.

The Biggs Boiler Works Company

AKRON, OHIO

New York Detroit

Biggs is completely equipped to produce, not only the more usual steel plate types, but paper mill equipment of special alloys. This cut shows a welded rotary digester of Enduro K.A. 28. Plates $\frac{3}{4}$ " thick. Test, 225 pounds.



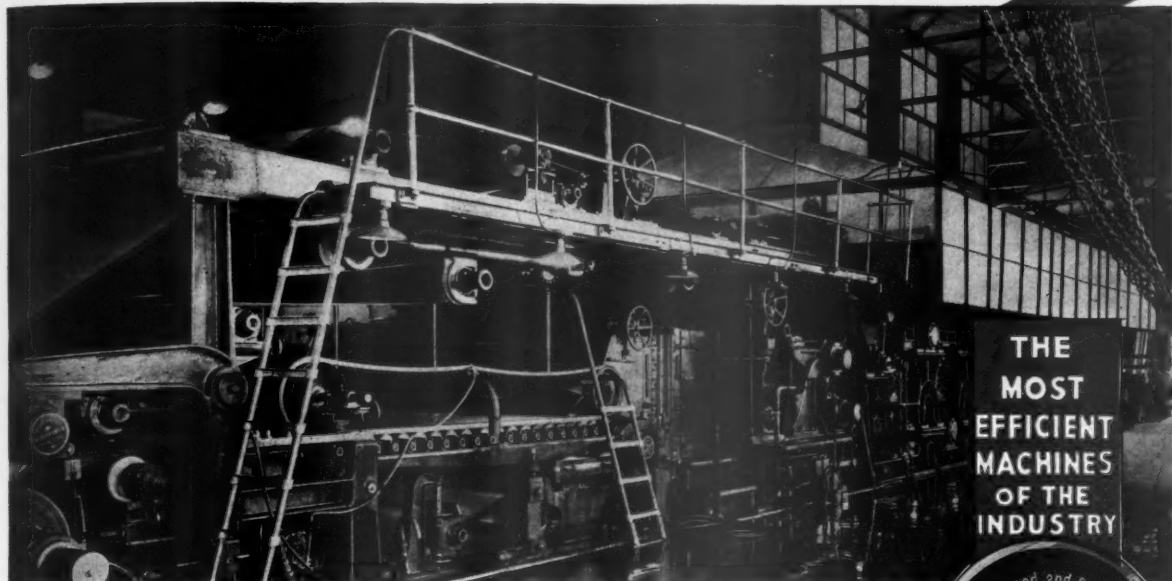
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for years of dependable
cooking and bleaching.



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PACE SETTERS



LYONS FALLS... Largest Harper Tissue Machine

Delicate eight and ten pound sheets are being formed on a 178" wire with perfect safety on this immense Harper tissue machine of Moyer & Pratt, Inc.! And they can be run indefinitely at high speed without a break!

The performance of this machine has been a revelation to experienced tissue makers. Gigantic in proportions, yet so finely tuned that it has been running for more than six months more safely and smoothly than many machines of half its width and far less capacity. Among the factors that account for its consistently smooth production of an admittedly difficult type of paper are the specially designed winder and uniform speed reel and the vibration-free Bagley & Sewall Spiral Bevel Gear Drive equipment.

An excellent demonstration of the versatility of Bagley & Sewall planning and production facilities and a willing ability to broaden the horizons of the industry. For in the industry's most progressive mills,—tissue, board, bond, news, kraft or specialty,—you'll find the pace setting machines emblazoned with the Bagley & Sewall emblem.

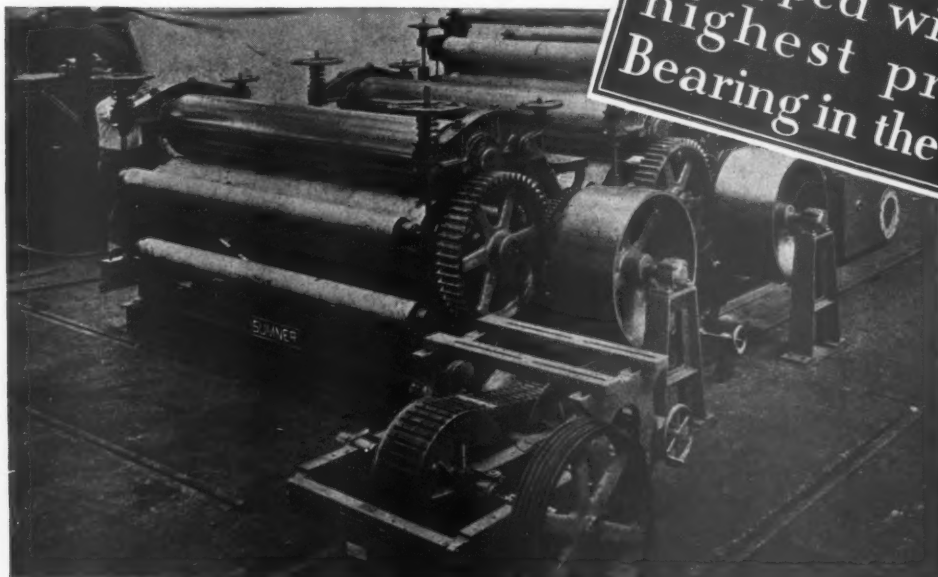
The Bagley & Sewall Co.

Watertown, N. Y.



ANOTHER MANUFACTURER IN THE PAPER INDUSTRY THAT USES SKF BEARINGS

SUMNER IRON WORKS



50 SKF BEARINGS AID SUMNER'S MACHINE CUT PAPER COSTS

FIFTY SKF Ball and Roller Bearings are used in every important position on the Sumner Iron Works, 96" Double Press Wet Machine. It is Sumner's way of guarding every step in the manufacture of their equipment to the end of insuring perfect performance. Years of experience with SKF have conclusively shown to Sumner that out on the job SKF Bearings certainly prove the wisdom of buying bearings toward a definite goal of service. It is on that basis that "the highest priced bearings in the world" are the cheapest by actual test.

The manufacture of paper calls for con-

tinuous service often under far from ideal conditions. Yet, SKF Bearings have demonstrated their consistent reliability in all types of paper mill applications. SKF Bearings have the precision to keep all interrelated parts working at their highest efficiency. They have the ruggedness and long life which mean economical operation. They show no wear, need no periodic adjustments and are fully protected from moisture. Where paper must be produced at the lowest cost per unit, SKF are a definite investment toward that end.

SKF Industries of California, Inc.

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San Francisco

480 Burnside St.
Portland, Oregon

1114 South Hope St.
Los Angeles

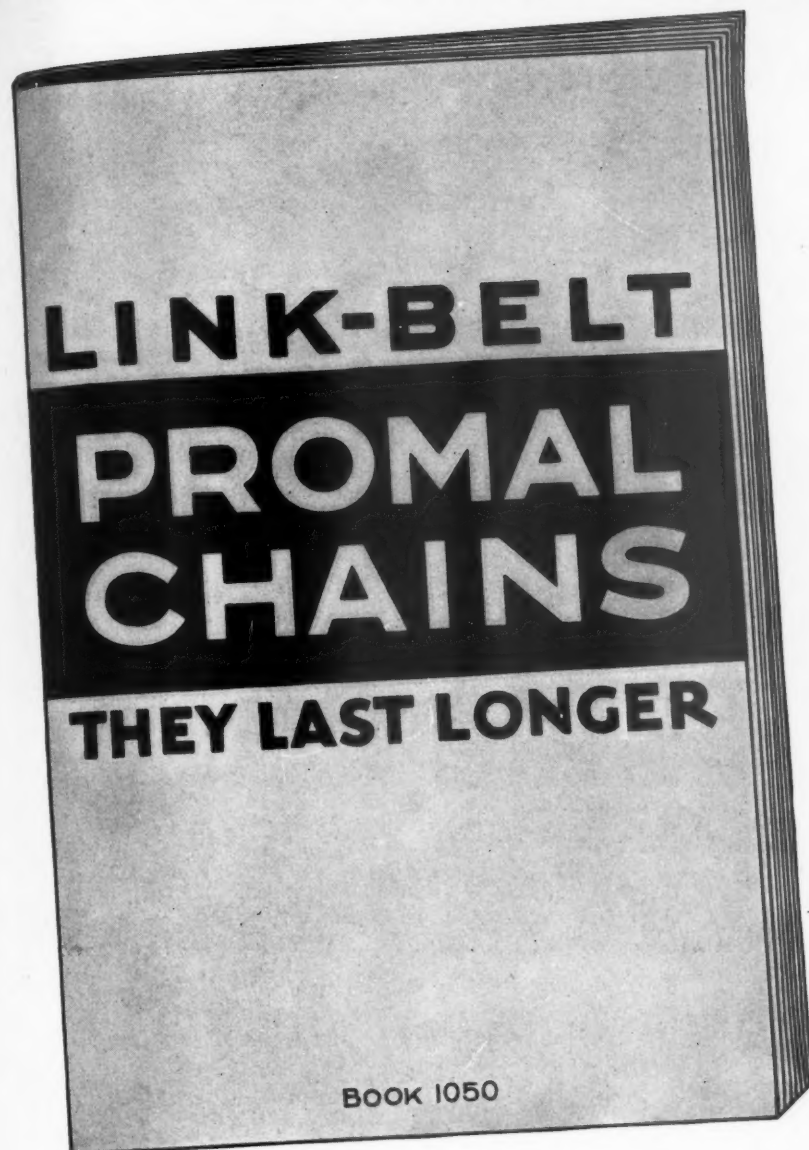
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EQUIPPED WITH THE HIGHEST PRICED BEARING IN THE WORLD

Means just this

SKF
Ball and Roller Bearings

That the manufacturers whose product is illustrated above preferred to pay more for their bearings and less for servicing or replacing them. They preferred to pay a higher price in the beginning than many times this higher price in the end. And, finally, they preferred to economize by using SKF bearings because they are made to do their job, not to fit a price list.



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Pacific Pulp & Paper Industry

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**for starting
and emergency
loads**

FALK Speed Reducers have 100% overload capacity for starting and emergency loads... and in actual service have established the high average of 96½ to 98½% efficiency in power delivery, depending on number of reductions. What could be better testimony to the correctness of their design and soundness of their construction?

Falk Speed Reducers are simple, compact, oil-tight, dirt-proof, quiet, free from heat and vibration. They permit a higher reduction per gear... transmit load and transform speed with less friction loss... than any other type or kind.

There are Falk Speed Reducers that will economically and satisfactorily meet your particu-



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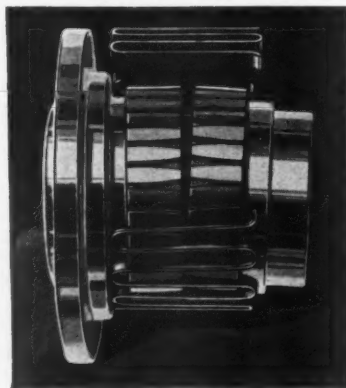
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LONGER SERVICE**
With Falk Flexible
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Falk Flexible Couplings provide smoother operation... longer machine life... increased production. This is because of their spring and groove construction which permits a degree of lateral and torsional resiliency obtainable in no other coupling.



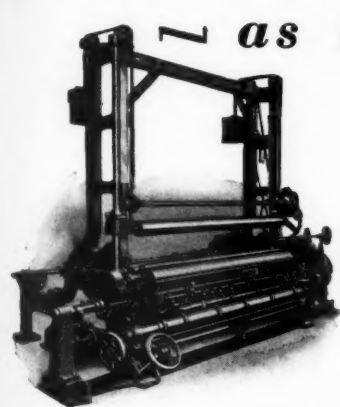
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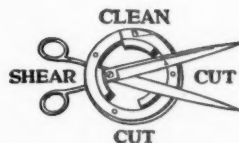
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as the legendary Scot

are the rolls that come from
L A N G S T O N

Where loose rolls mean lost profits—"tighten up" by installing a Langston Slitter and Winder. Here's a machine that is noted for producing firm, tightly wound rolls with straight, dust-free edges. Wherever Langston Slitters and Winders are used—on whatever grade of paper—there you'll find high-quality production combined with low operating costs.



SAMUEL M. LANGSTON CO., Camden, N. J.

L A N G S T O N
S L I T T E R S



Marcy Rod Mills improve stock and lower production costs

IN THE RECENT ENLARGEMENT of a large Kraft plant two more Marcy Rod Mills have been added. The additional equipment was installed because of the uniformly satisfactory results obtained from the first Marcy Mill.

The installation now consists of three 7' x 16' Marcy Rod Mills especially adapted for beating Kraft pulp.

These three units are now beating 150 tons of Kraft pulp per day, raising the average strength test from 60 to 95—equivalent to three hours average beater treatment.

The bursting strength of the paper has been raised 5% and the tearing strength raised 10%. A cleaner sheet has also resulted on account of

the elimination of shives and fibre bundles because of the rod mill action.

The three Marcy Rod Mills require 576 H.P. to accomplish this result. To attain the same result with the old method of treatment would require 20 one ton beaters with a power consumption of 1500 H.P.

When you consider the saving in power and the absolute control made possible by the Marcy Rod Mill you cannot afford to be without this equipment.

Marcy Rod Mills will improve your stock and reduce your manufacturing costs by a saving in power. May we send one of our engineers to your plant to prove the desirable application of Marcy Rod Mills to your beating problems?

The MINE and SMELTER SUPPLY COMPANY MARCY MILL DIVISION

Licensee under the Marcy Rod Mill Patents

DENVER, COLORADO
1422-17th Street

Manufactured in Canada by
WILLIAM HAMILTON, LIMITED,
PETERBOROUGH, ONTARIO

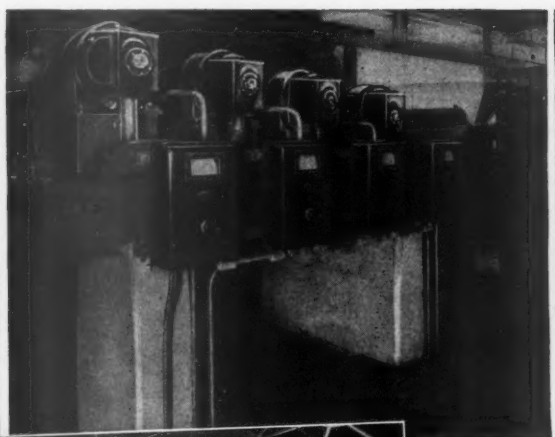
NEW YORK CITY
225 Broadway

MASSCO

When writing to THE MINE AND SMELTER SUPPLY CO., please mention PACIFIC PULP AND PAPER INDUSTRY



Seven G-E direct-current motors driving cylinder molds. Part of electric wet-end equipment in an eastern board mill.



Four G-E direct-current motors and control equipment operating primary presses. Part of electric drive in an eastern board mill.



Cylinder machine equipped with seven G-E enclosed motor-rheostat panels for auxiliary motors on cylinder molds in an eastern board mill.

Motorize the Wet End —and Save the Felt

IN spite of the tempting economies realized with electric sectional drive, it is not always economical or advisable to scrap existing mechanical equipment.

G-E engineers have designed and applied for the first time a practical electric aid to the mechanical drive. Suitable G-E motors are added to the primary press rolls and cylinder molds. These motors receive power from a direct-current

generator, which is belted to the backline shaft and supplied with constant field excitation. Acceleration is even—felt strain is minimized—economy results.

Possibly there exists in your plant a similar condition with backline too valuable to scrap. Ask the nearest G-E office to tell you more about General Electric's solution of this problem.

JOIN US IN THE GENERAL ELECTRIC PROGRAM, BROADCAST EVERY SATURDAY
EVENING ON A NATION-WIDE N.B.C. NETWORK

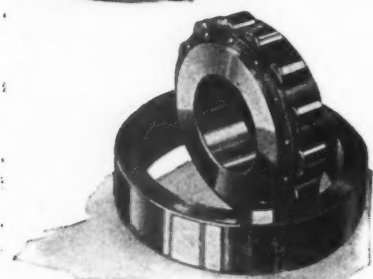
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Regular BRUTES *for* STRENGTH



Write for the Catalogs. Put it squarely up to our engineers to show you how you can get the utmost in combined speed-and-load-ability.

As a load carrier, the NORMA-HOFFMANN Precision Roller Bearing is in a class by itself. It stands up under the heaviest of burdens. And where speed is a factor — there, too, it can be depended upon.

For continuous, heavy-duty service — or where shock, jar, vibration, and sudden overloads must be met — even where high speed is added, to make the conditions harder — there is where PRECISION Roller Bearings show their outstanding worth, in dollars-and-cents savings.

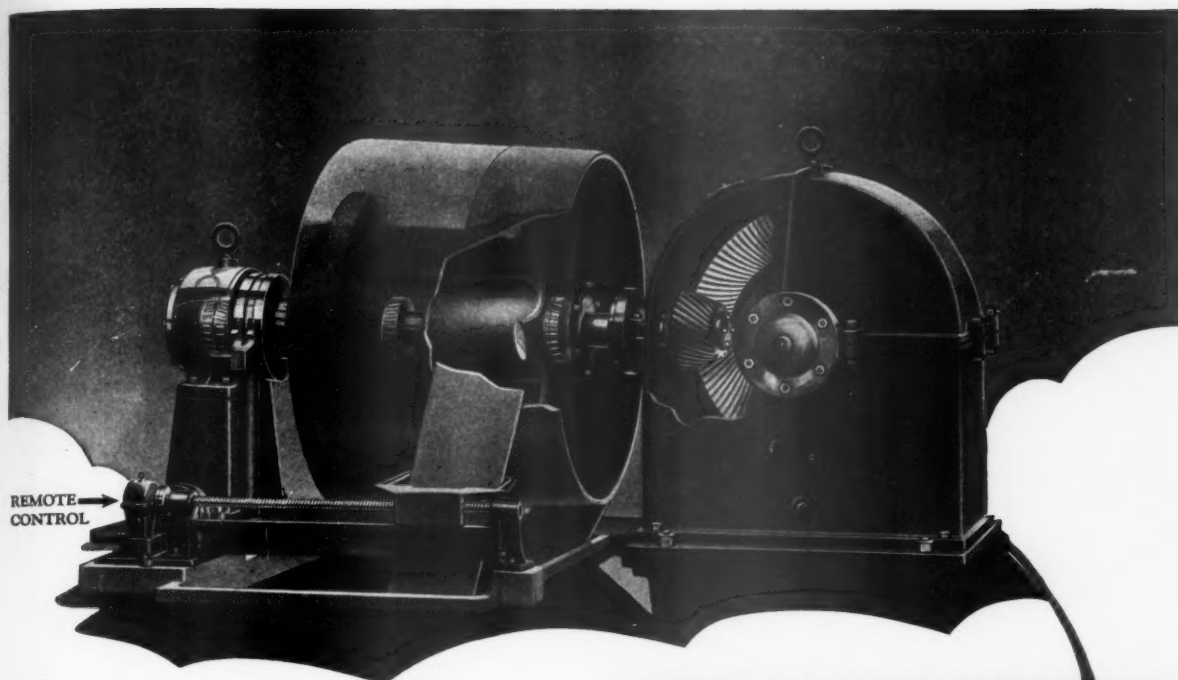
Try them on your most stubborn and difficult bearing duty — they'll not disappoint you. And don't forget — they interchange with all standard ball bearings, but give you vastly greater load capacity. They'll even carry more than most double-row ball bearings.

"NORMA-HOFFMANN" **PRECISION BEARINGS**

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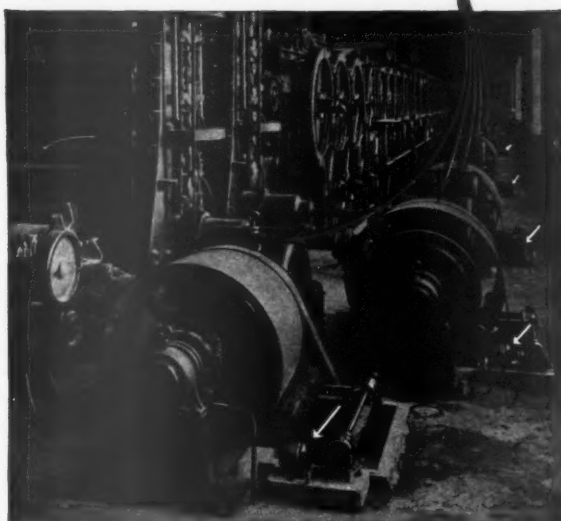


No Back Lash or Vibration
to Interfere with

Speed Uniformity

IN THE NEW RICE-BARTON Spiral Bevel Drives, speed is controlled by electrically operated belt shifters. Spiral bevel gears running in oil insure smooth, continuous operation without back lash or vibration. All parts are extra heavy, giving greatest rigidity and strength. Leak proof casings, anti-friction bearings, unit mounting with positive shaft

alignment,
magnetic
clutch and



Installation at Chillicothe Paper Company
showing Rice-Barton Remote Control Drives.

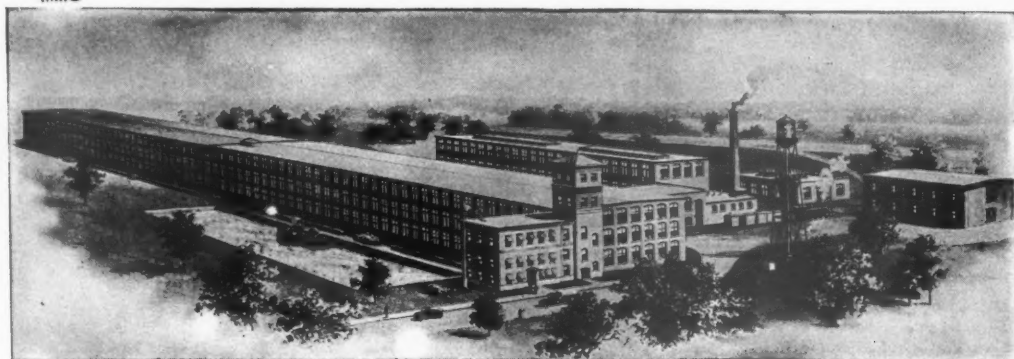
remote control make these drives as nearly perfect as human ingenuity and experience can devise.



Spiral Bevel

DRIVES

When writing to RICE, BARTON & FALES, INC., please mention PACIFIC PULP AND PAPER INDUSTRY



THE HOME OF ALBANY FELTS

PROGRESSIVENESS

The Albany Felt Company inaugurated a new era in felt making when they discarded the old idea of standard designs and started work on the individualizing of designs... developing an individual design for each position on each machine.

In recognition of this, Albany is almost invariably the first to be called in on new developments in the paper industry.

Perhaps you are considering a change in operating conditions which will involve felts. In this event, make it a point to discuss your ideas with our representatives.

We make the most complete line of paper machine felts and jackets in the country, and to any mill having unusual problems involving their use we offer the advantage of world-wide experience in every kind of paper and board, plus the benefit of progressiveness and modern methods.

ALBANY FELT COMPANY

ALBANY, NEW YORK



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telephone

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Our Packing Catalogue describes the J-M Packing Service thoroughly. Our recommendations for packing use are carefully tabulated and the complete list of Johns-Manville "dollar saving" Packings is fully illustrated and described. Send for your catalogue and address of the nearest J-M Packing Distributor.



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INSULATION . . . REFRACTORY CEMENTS . . . TRANSITE



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Please send me a copy of your booklet, "J-M Packings"
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Name..... P-132-11

Address.....



The New Williams Sheet Dryer

Dries Hand Sheets Same as Paper on Big Paper Machine



FEATURES—

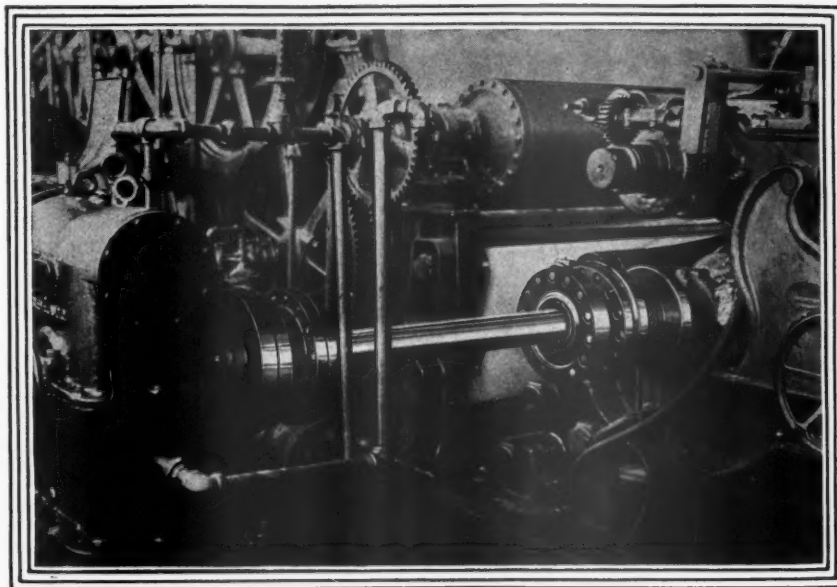
1. *Electric Heat, Thermostat Control.*
2. *Sheet clamped under dryer canvas.*
3. *Drys sheet flat in 4 - 5 minutes.*
4. *Heavy polished copper top.*
5. *Large drying surface, 20x20 inches. Four 8x8-inch sheets may be dried at a time.*

WILLIAMS APPARATUS COMPANY
WATERTOWN, N. Y.



When writing to WILLIAMS APPARATUS Co. please mention PACIFIC PULP AND PAPER INDUSTRY

FAST'S COUPLING PROVIDES its OWN Floating Shaft



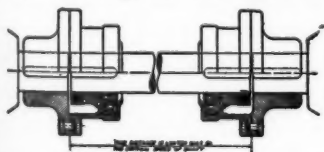
Fast's Coupling on Paper Machine Drive. Riverside Fibre and Paper Company, Appleton, Wis.

ON THE paper machine drive, where the motors must drive through intake shafts, Fast's coupling solves the problem and makes coupling shut-downs a thing of the past.

Note the diagrams below. See the principle and how its works.

On the motor shaft—and on the machine drive shaft—are cup-like hubs, with internal gears inside the cups. On each end of the floating shaft is a hub carrying a spur gear, meshing with gear of the cup at each end. Each unit is encased in an oil-retaining casing. As the shaft revolves, even excessive misalignment is taken up between the gear-teeth faces, the longer the floating shaft, the smaller the error in each end of the assembly.

No bearing for the intake shaft. Nothing to need repairs or adjustment. Total distance of drive is limited only by the critical speed of the shaft.



Free Pamphlet Tells All

Write for a free copy of the new pamphlet "Solving Coupling Problems in Paper Mills". Described in it is the well known Fast's Jordan Coupling that has simplified Jordan operation and eliminated coupling shutdowns. Also, all types of Fast's Couplings are shown as they solve coupling problems in paper mills.

FAST'S Self-Aligning COUPLING

MAIL COUPON

The Bartlett Hayward Company

227 Scott Street Baltimore, Md.

Please send me the free pamphlet on "Solving Coupling Problems in Paper Mills".

Name.....

Name of Mill.....

Address.....

Get
Free
Booklet



When writing the BARTLETT HAYWARD CO., please mention PACIFIC PULP AND PAPER INDUSTRY.

Satisfactory Service!
at Your Command

PAPER MILL MACHINERY

For Your Particular Requirements

The Undercut Trimmer

An Automatic Clamping Cutter, conceded the BEST Trimmer for THE PAPER MILL, replacing other makes of cutters where accuracy and strength are a factor in efficient production with minimum cost of maintenance. Equipped with motor or pulley drive, and safety starting device as desired.

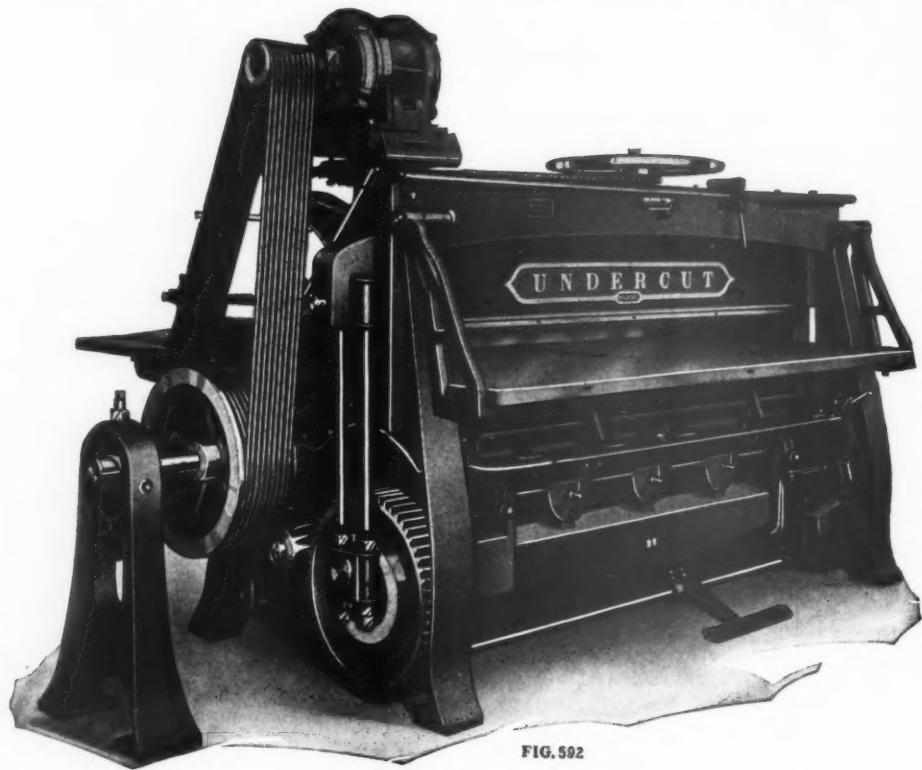


FIG. 592

THE SMITH & WINCHESTER MFG. CO.

Dept. MFP, SOUTH WINDHAM, CONN.

— PAPER BAG MAKING MACHINERY —

When writing to SMITH & WINCHESTER MFG. CO. please mention PACIFIC PULP AND PAPER INDUSTRY



Reach for— the Gear Reference Book!

WHEN you have a knotty problem involving Speed Reduction, Gears, or power transmission equipment, you may be sure you will always find the answer between the covers of "Gear Problems."

Have you a copy to "reach for" on your desk? A 661 page book—thoroughly cross indexed for ready reference—free to executives.

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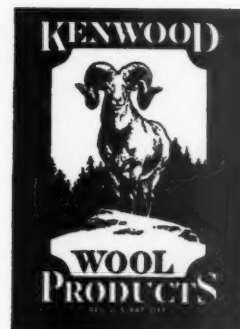
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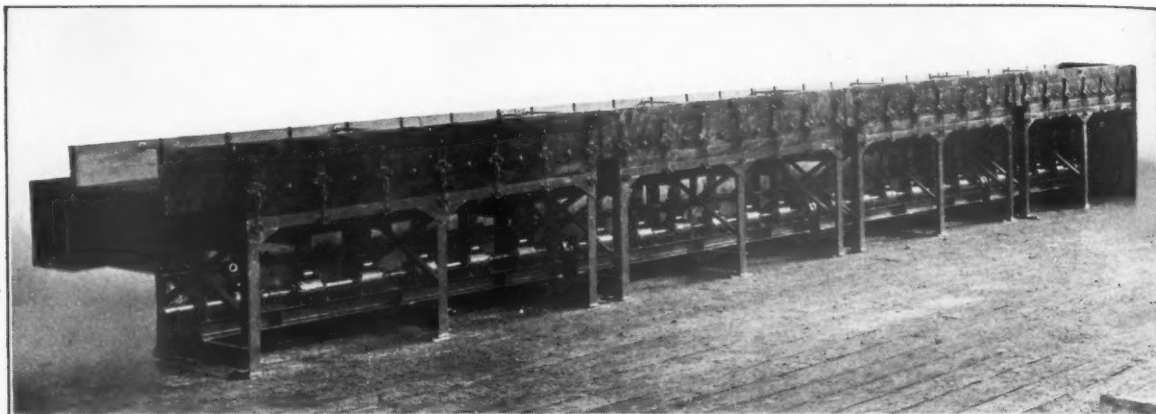
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Douglas Building

¶ There is every indication that prices are going lower and that, when they do level off, it will be at a point considerably below the fat margins enjoyed not so long back. The statement is not intended to describe a small circle about the pulp and paper industry, but to encompass all prices and all industries in general.

¶ It is certain that drastic drops in the past year or more in the prices of grain, copper, rubber, cotton, raw silk, and a multitude of other basic commodities can not forever remain a phenomenon so completely out of balance with the economic picture as a whole.

¶ Eventually these reductions in other fields must contribute their pressure upon other commodities thru a general scaling down of buying power. Prices have a somewhat liquid tendency to effect an

equalization and eventually to spread the benefits all down the line to the ultimate consumer.

¶ In pulp and paper the decline in commodity prices is already on the toboggan. Pulp prices have been sliding off for many months now. Several grades of paper, notably kraft and news print, have been hanging their heads and have the look of fever in their eye. As a whole, however, the paper industry has perhaps maintained a fair general health in view of the general plague which surrounds it.

¶ It seems rather silly to admit on the one hand that the industry has capacity to produce more than the visible market can absorb, while at the same hoping that the economic law of supply and demand will not apply eventually to a price structure which may be artificial.

¶ It seems that a far better policy would be to admit the facts and look forward without tears to an era of narrower margins. This is not depression. Rather, it is sound practice, and it should be welcomed. A calf that's been in the clover patch too long may look bigger with his bloated belly, but it's a cinch he is not a healthier animal than his brother that has stuck to the straight diet.

¶ In short, the capable companies are looking fearlessly and clearly into the present downward trends, welcoming the pressure which makes them improve their operating efficiency, knowing that the end result will be the elimination of the marginal and inefficient units which are always the source of trouble anyway.

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The Outlook Is Bright

An analysis of world statistics and trends
designed to answer the question

What's ahead for the Pacific Coast?



GREAT things ahead for the Pacific Coast. Prospects never were brighter. This is no empty Pollyanna whim. If we can but screw up the intestinal fortitude to pierce the temporary gloom of mental depression and look a few cold, hard facts right in the face there will be small difficulty in demonstrating that in the present process of tightening the economic belt

the prospects were never better for the steady development of a pulp and paper manufacturing industry of world importance on the Pacific Northwest coast of America.

Why? To answer in logical manner demands a consideration of three major points. First, a discussion of general economics and consumption trends. Second, a consideration of present sources of supply and their ability to continue in competition. Third, an outline of the peculiar advantages of the forest regions of the Pacific Coast.

The United States is the world's greatest market for pulp and paper products. No other nation on the globe even approaches the United States in the matter of paper consumption. The nation's 120 millions of people have an annual per capita consumption of all grades of paper exceeding 200 pounds, or a total consumption of some 12,700,000 tons. And, since the domestic supply today—reduced to terms of the essential raw material, wood—far from meets the demand, the United States can be considered as THE principal market around which a discussion such as this can and should be written.

United States Consumes 12,700,000 Tons Of Paper Annually

Fundamental statistics must be scanned briefly in order more clearly to define the economic picture and to note trends. The table accompanying this article shows the position of the United States with relation to its total paper consumption, domestic production, and imports. It will be noted that to meet its total consumption demand of 12,700,000 tons of paper the United States must import annually 2,400,000 tons of finished paper, 1,700,000 tons of pulp, and 1,350,000 cords of wood—which, reduced to terms of pulp, is equivalent to some 700,000 tons.

Computing these total imports of raw material, semi-manufactures, and finished products into terms of pulp requirements we see that Uncle Sam must lean over the neighbor's fences for an annual importation of some 4,800,000 tons of pulp. To subtract this total import sum from the nation's annual paper consumption of 12,700,000 tons does not provide us with a figure representing the net of domestic production, in so far as new pulp requirements are concerned. It must be remembered that the United States manufactures nearly 3,000,000 tons of boxboard annually, and that this class of paper product—with others—reworks a vast tonnage of old papers.

Therefore, the total paper consumption must be discounted substantially to arrive at the actual new pulp requirements. We may approximate this new pulp requirement by taking the sum of domestic pulp production, pulp imports, finished paper imports, and wood imports (computed in terms of pulp yield). This sum total is 9,300,000 tons. Uncle Sam is presently importing 4,800,000 tons of that sum total, or about 52%.

Imports Of Paper And Pulp Are Rapidly Increasing

It is necessary to go back a little to show trends, to show how the United States is drawing more and more heavily upon outside sources to meet its paper consumption demands. Go back 20 years. In 1910 the domestic cut of pulpwood was 3,150,000 cords. Today it is 6,150,000 cords. Domestic production of all grades of pulp has expanded in the same score of years from an annual 2,500,000 tons to 4,500,000 tons. Domestic production of paper increased in the same period from 4,500,000 tons approximately 11,000,000 tons.

In the same 20-year period the imports of paper have shot upward from a negligible few thousand tons — on which accurate statistics are not available — to an annual 2,400,000 tons. Pulp imports have grown from 500,000 tons to 1,700,000 tons. Imports of pulpwood have shown less variation, ranging in the score of years between 950,000 and 1,500,000 cords annually.

The origin of these different imports is confined to a few sources. With the reciprocity declarations of 1911 and the placing of news print on the free list, the news print industry more or less packed up and went over into Canada. Meanwhile news print manufacture has gone into a decline in the United States. In 1926 Canadian production of news print for the first time exceeded that of the United States. In 1929 Canada produced 2,728,000 tons as compared to a United States production of

not quite half that amount, or 1,392,000 tons. About 90% of Canada's news print production is marketed in the United States.

It is quite natural to expect that the spruce forests of Northeastern Canada, lying in such close proximity to the masses of population in the Eastern part of the United States, should early have been exploited to meet a rising demand for pulpwood and its products. In addition to the tremendous news print tonnage Canada has supplied the United States with practically all of its pulpwood—until the embargo fiasco of 1930 permitted the entry of some 280,000 cords of convict-produced wood from Soviet Russia.

ANNUAL BUDGET OF THE PULP AND PAPER INDUSTRY OF THE UNITED STATES

PAPER—

Total Consumption (tons)	12,700,000
Domestic Manufacture	10,300,000
Imported	2,400,000

PULP—

Total Consumption (tons)	6,200,000
Domestic Manufacture	4,500,000
Imported:	
Groundwood	250,000
Sulphite	1,050,000
Sulphate	400,000
Total Imported	1,700,000

WOOD—

Total Consumption (cords)	7,500,000
Domestic Production	6,150,000
Imported	1,350,000

U. S. ANNUAL DEMAND—

Domestic Produced Pulp (tons)	4,500,000
Imported Pulp (tons)	1,700,000
Imported Paper (tons)	2,400,000
Imported Wood (In terms of pulp) (tons)	700,000

Total Annual new pulp demand (tons).... 9,300,000

The bulk of the pulp imports have come from Canada and Sweden with Finland, Norway, and Germany trailing rather far behind. Canada supplies 700,000 tons in all, of which about 375,000 tons is sulphite, 140,000 sulphate, and 200,000 tons mechanical pulp. Sweden contributes a very negligible quantity of mechanical pulp, but its chemical pulp exports to the United States run approximately 330,000 tons of sulphite and 200,000 tons of sulphate. Finland ranks a poor third with a total export of 155,000 tons, nearly two-thirds of which is sulphite. Norway and Germany contribute about 80,000 and 60,000 tons each, practically all of which is sulphite.

Denuded Forests Cause Paper Industry To Move Westward

The opportunity for these heavy importations by the paper industry is found in the persistency which the pulpwood axes have been laid upon the forests of the United States in the North Atlantic and Lake States. The paper industry had its beginning around the centers of population in New England. But as the population of the nation grew and moved westward and as the per capita consumption of paper steadily increased the North Atlantic forests were unequal to the pulpwood demand and consequently the paper industry picked

up and moved gradually westward into the forest regions found in the Lake States — Pennsylvania, Ohio, Michigan, Wisconsin, and Minnesota. Meanwhile the older regions in the Atlantic states were denuded to an excessive degree.

New York state, for example, is favorably situated with respect to population centers which consume much paper. In consequence, this state has an old and established paper industry. But the demands have been greater than the ability of the state to supply. In this state is to be found a practical example of the stern economics which tend to place the pulpwood regions in the eastern states at an increasing disadvantage. New York state, for many years, ranked third in the United States in total consumption of pulpwood. But in very recent years its total wood consumption has steadily declined while at the same time the proportion of its wood imported has increased. In the years 1926, 1927, 1928 pulpwood consumption in the Knickerbocker state dropped from 1,000,000 cords to 875,000 to 800,000 cords. Meanwhile pulpwood imports steadily increased, accounting for 580,000 cords of the total 800,000 cords consumed in 1928. As for the cost, this was uncomfortably high, the average per cord at the mill being approximately \$18.50 in 1928. New York was second only to Maine and Wisconsin in total pulpwood consumption in 1928, but its trend indicated that the state of Washington will have appropriated third place in 1929 when the official statistics are finally available.

High Cost Of Pulpwood Disadvantageous To Eastern Mills

What of other Eastern states? Pennsylvania, using some 400,000 cords of wood annually, finds its imported portion now more than half and the average price above \$17. New Hampshire finds its pulpwood consumption dropping off, the best apparent explanation being the average cost of wood, just under \$20 in 1928. Michigan's wood imports are growing, while its total consumption is rather static at 350,000 cords, and the wood cost is around \$14. Wisconsin still finds much domestic wood, but its consumption curve has flattened out in the last three years, while its wood imports are rapidly creeping up with an average cost ranging well above the more favored regions. Maine, leading pulp and paper state, has leveled off its climb, is drawing an annual 175,000 cords from foreign shores, and is handicapped with its \$17 wood cost.

There in a nutshell is the economic picture of the mills in the Eastern states, in those states most favorably situated to import wood, and whose products rank in the higher levels which include the better grades of sulphite papers.

Contrast the economic position of the mills in the state of Washington with this group. While pulpwood consumption is climbing rapidly upward, the cost of wood has been steadily dropping, reaching in 1928, according to official government figures, the favorable low average of \$7.50 per cord.

It should be remembered that altho the manufacture of paper has been carried on in the Pacific Coast states for more than three quarters of a century, such manufacture has been purely a local enterprise supplying the major grades for a local market. Not until 1925 did the Pacific Coast take on a new significance as a manufacturer of pulp to be marketed to paper mills outside of the local area. In other words, about 5 years ago the situation had become ripe in an economic sense to permit the utilization of Pacific Coast woods for the pro-

duction of domestic pulp to compete with the growing foreign imports in the domestic market offered by the Eastern paper mills.

The wood had always been there on the Pacific Coast, but, aside from the economic phase, the pulp-using mills of the Eastern states had not accepted the idea that the Pacific Coast tree species produced a satisfactory pulp. But in that year, 1925, some Pacific Coast pulp was sold to the Eastern paper mills. In the ensuing half dozen years the manufacture of pulp on the Pacific Coast for outside sale developed in rather phenomenal fashion. Including British Columbia, which lies in the same forest area, pulpwood consumption jumped in the Pacific Coast region from slightly more than 500,000 cords in 1921 to an estimated 1,475,000 cords in 1929. More new capacity has been added during the current year. The state of Washington alone has increased its pulpwood consumption from 150,000 cords in 1920 to an estimated 800,000 cords in 1929, and it is still growing.

Eastern Pulpwood Forests Unable To Meet The Demand

What contributes to the high cost of wood in the Eastern states and the low cost of wood in the Western states? In the East the pulpwood forests have long had to withstand the siege of pulpwood axes. Denuding has exceeded reforestation. Competition for this dwindling pulpwood supply has stimulated price and served also to make less rigid the wood requirements until today most trees are finding their way to the Eastern pulpmill when they ought not yet to have graduated from the nursery.

It is probably generally conceded, and statistics seem to bear out the point, that the pulpwood areas of the Eastern states are today developed beyond the capacity of the forests to meet the demand. When the territory was new there was capital in the forests capable of providing a fixed income of pulpwood, but the overdevelopment of each region, together with improper attention to reforestation, has meant a steady dipping into this capital until today these forests, if we may draw an analogy, are incapable of meeting their interest payments.

Definite Limits To Canadian Pulpwood Exports

With investments sunk in mills in these depleting forests there arises a natural struggle to survive, a condition which is not conducive to lower pulpwood prices. In looking to Canadian sources of wood it must be borne in mind that depletion is going on across the border as well. The great maw of the Canadian news print industry must first be fed. Consequently Canadian wood available for mills in the United States tends to move farther away from the Eastern American mills as the years progress, and, with the increase in distance, transportation costs add their burden.

Further, Crown timber must stay within Canada, and this factor is one which places a definite limit on the wood available for United States pulp mills. There is also to be reckoned the growing tendency of the Canadian government to discourage the export of raw materials to the end that the benefits of manufacture may accrue to Canadian payrolls. In all this there is before the Eastern mills the growing specter of dwindling raw materials and rising costs, all of which lowers these less favored organizations unwillingly into the strata of marginal producers. Of pulpwood sources

other than Canadian (in which we include Newfoundland and Labrador) there is little to say. In the present year imports of Russian pulpwood have come prominently into the news. Russian wood contracts for 1930 delivery represent approximately one-fifth of the normal total wood imports, but the price is high and the source is regarded as neither long-lived or wholly dependable. These imports, however, may be a temporary sop which can upset the ordinary run of affairs.

Wood Scarcity Encourages Pulp Imports From Other Regions

Eliminating the Russian wood we find Canada with a monopoly on this raw material, but unable to contribute more than a small amount of the total need outside of somewhat localized areas. Wood is an exceedingly bulky commodity of comparatively low cost and does not lend itself to long distance hauls without rapidly eating up its value in transportation charges.

Unable to secure wood the papermills turned to pulp because the production of this semi-manufacture in the heart of a forest region permits the elimination of heavy primary transportation costs and provides a product which lends itself readily to fairly economical shipping. Where the pulp is produced is determined essentially by two factors: cost of the wood at the mill, and transportation of the pulp from mill to consuming market. Up until a few years ago the pulp market in the eastern part of the United States was somewhat a three-cornered affair. The domestic mills of the United States, the Canadian mills, and the mills of Scandinavia provided the economic balance. Within the past half dozen years the Pacific Coast pulp mills have injected a fourth factor, and a most important factor, in determining the world pulp market.

Low Wood Cost Is Fundamental Advantage Of The Pacific Coast

The fundamental advantage of the Pacific Coast is the abundance and low cost of its pulpwood. This does not contribute the entire advantage, however, since methods of logging, the presence of a large lumber industry, rapid reforestation, and a favorable climate which advantageously affects conversion costs, are also important items. The advantages of transportation need to be placed in a separate category. Location of practically all of the Pacific Coast mills on tide water permits them to land their pulp at Atlantic ports for an ocean carrier charge of \$6.00 per ton. Further, a number of railroad rate concessions into Midwest paper mill territory have been made in recent years and it is not at all improbable that further concessions may be made in succeeding years as pulp manufacturing on the Pacific Coast more securely establishes its position as a basic industry.

Coast Production Expands Beyond Purely Local Needs

Why should wood costs for the Pacific Coast mills be so low? The answer is again in the fundamental law of supply and demand. One must constantly keep in mind that the pulp industry on the Pacific Coast is very new. Up until about 1925 pulp and paper production on the Coast was almost entirely a local proposition. Wood was cheap, but there was not the great economic pressure in

paper sales to cause too great an inquiry into pulpwood costs. With the introduction of more mills, however, mills which produced pulp to compete with pulp from other regions in the great pulp-consuming area in the Eastern states, more and more attention was put upon securing the most from the great initial advantage which the Pacific Coast mills held, namely, abundant wood. The lower the wood cost could be driven, the greater the sales advantage for the finished pulp. Consequently the wood room became a focal point of study.

Sawmill Waste Lowers

Pacific Coast Average Wood Costs

One element which has greatly lowered wood costs on the Pacific Coast is the widespread utilization of sawmill waste. Many a Pacific Northwest sawmill has in the past five years retired its expensive refuse burner. The waste is still there, but straddling the conveyor now is a wood preparing plant converting that waste into good pulp material and hogged fuel—with much of the latter going into paper mill boilers. Government figures show that in 1928, of a total of 651,000 cords of pulpwood consumed in the State of Washington, 317,000 cords were classified as slabs and mill waste. The percentage should be even greater for 1929. Conversion of sawmill waste into pulp material represents the conversion of a hitherto total loss into a new and rather unexpected revenue.

Aside from sawmill waste the Coast mills have had another important source of wood supply in the logging camps. It happens that Western Hemlock has for a long time gone begging in the lumber market, but, with the establishment of this typically Western wood as a producer of excellent sulphite pulp, the situation is rapidly changing. Hemlock logs have been competing directly in cost with sawmill waste, and when we speak of Western logs we refer to sticks ranging in diameter from 14 inches up to 36 inches and more, and in length from 16 to 40 feet.

A factor favorable to the pulp industry on the Coast has been that Douglas fir, the prime merchantable lumber tree of the Pacific Northwest, is found intermixed with Western Hemlock, but that the Fir predominates on the lower easily-logged levels, while the Hemlock predominates on the upper slopes. Naturally, the better lower-level fir stands have been the first to be logged, while now, as the logging gets farther and farther up the slopes, the Hemlock occurs in larger percentage. This factor augurs well for the continuance of low prices on Hemlock.

Cordwood Supply Is An Important Balancing Factor

While sawmill waste and Hemlock logs are balancing factors in determining the cost of Western wood, there is still a third element, steadily growing in importance. It is the supply coming in the form of cordwood from the small pulpwood contractor, and the farmer. Today a comparatively small amount of wood is going into Coast pulp mills as cordwood, but the supply is growing. It is an important balancing factor in cost, for should logs and mill waste advance the cordwood supply creeps in to take advantage, and down go costs again.

When considering the downward trend of pulpwood costs on the Pacific Coast against the dwindling supplies and rising costs of wood in the Eastern states, there is evident a decided advantage in the present and in the future for the Pacific Coast mill.

Further, the science of pulp manufacture does not stand still. The new mills of the Pacific Coast are among the finest to be found in the world. They have taken advantage of the latest developments in pulp manufacturing science and it is reasonable to assume that, compared with the older mills in the Eastern part of the continent, they are in a position to produce pulp of higher grade and at less cost.

The bugaboo under which the Pacific Coast mills have had to endure during the first few years in entering the world market, namely that the Pacific Coast pulp was naturally inferior due to the wood species, has now been dispelled in all but biased minds. While it is true that there is perhaps less operating data on the Pacific Coast woods, it is nevertheless significant to point out that several hundred thousand tons of Pacific Coast pulp are moving into the markets each year and that included in this market are many paper mills with long established reputations for making the very highest grade of paper. Further proof is seen in the substantial financial interest taken in Pacific Coast pulp mills by such well known Eastern organization as the Hammermill Paper Company, and the S. D. Warren Company.

Progressive Eastern Mills

Seek Pacific Coast Pulp Supply

Since it is quite evident that the Pacific Coast pulp has established itself as a definite factor in world markets from the standpoint of tonnage and quality, and since the newer Pacific Coast mills are in such a strategic economic position, it is not surprising to note the increasing interest in the Pacific Coast as a source of domestic pulp supply by and for the paper mills in the eastern part of the United States. Several eastern paper mills have been far-sighted enough to have definitely identified with Pacific Coast pulp production, either by taking a financial interest in a Pacific Coast mill or in effecting contracts for Pacific Coast pulp supplies.

It is rather significant that in the present era of unsatisfactory prices there has been an increased interest on the part of the East in linking up a Pacific Coast pulp supply as a matter of protection. Any number of investigations have been carried out in the West by Eastern paper mill interests in recent months and some of these at least can be expected to materialize in new pulp capacity on the Coast.

Western Mills Hold Advantage In Period Of Continued Low Prices

Such new capacity does not represent an addition to the total pulp capacity of the world, but rather a displacement of the uneconomic marginal units which find themselves submerged in rising wood costs. Stated in another way, if the present era of low prices is unsatisfactory for Pacific Coast mills, yet permits them to operate on some margin of profit, it is reasonable to assume that these same low prices are presently operating to the very serious disadvantage of pulp mills in the Eastern part of the continent where wood costs are so much higher.

Pulp stocks are now low and buying is of a hand-to-mouth nature, two factors which indicate that the present era of low prices must eventually show an upturn when a general business pick-up reflects itself in increased orders for paper. If that upward swing in somewhat delayed, there will be all the more incentive for the Pacific Coast pulp mills to continue to study their operating costs and to further increase their operating

efficiency. At the same time a prolonged era of low price may, for some of the Eastern pulp mills, be akin to holding the puppies too long under water. It is this stern set up of economics which points this continued shift of the pulp industry to westward and makes the outlook for the Coast quite rosy.

So far nothing has been said about paper manufacture. It is probable that paper manufacture for a general national market will be somewhat slower in following pulp to the Pacific Coast due to the present heavy investments in paper mills in the older regions of the country. As these older units become obsolete, however, there is an excellent chance they will be replaced by Pacific Coast installations in order to effect more efficient manufacture. The manufacture of pulp at a point far removed from the paper mill involves several unnecessary items of expense such as drying, baling, shrinkage, and investment which could be eliminated if the pulp were carried in slush form from pulp mill to paper mill.

Further, the spread in transportation costs between pulp and finished paper is even now not very great and this spread most likely would decrease as paper became established as a tonnage commodity and agitation carried out for better rates. There has already been a representative transfer of paper tonnage from the East to the Pacific Coast and the law of obsolescence will without doubt effect many more such transfers.

Aside from the domestic market for paper, the Pacific Coast embraces many opportunities for expansion of its pulp and paper industry along both geographical and industrial lines. The potential export market in the Orient is a tremendous item and the Pacific Coast stands first to benefit by the eventual and certain opening of a major export trade with Asia. Small amounts of pulp and paper are already finding their way from Pacific Coast mills to the Orient and with the elimina-

tion of civil war and the stabilization of government in China, the ultimate in this market can scarcely be comprehended.

There are other export markets which are fair game for the Pacific Coast industry. An experimental traffic in pulp has already been developed with Europe and South America, territory which has heretofore been considered the more or less the exclusive backyard of the Scandinavian mills. Entry into these markets is on a purely economic basis, a competition of costs and quality.

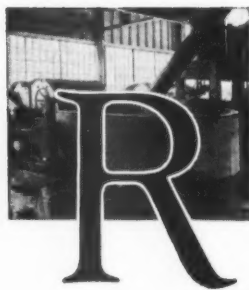
The expansion of markets along industrial lines is more difficult to forecast since the wait here must be upon scientific research into the possible uses of cellulose. Some wood pulp is already being converted into rayon, lacquers, and other cellulose products and what the future holds in store here none can fortell with any degree of certainty. That there will be major expansion of this cellulose industrial market is generally conceded and when that expansion does take place Pacific Coast mills, which are already looking forward to this phase of the industry, will be in a favorite position to profit by it.

There is one more point to answer. Granted that the forest regions of the Pacific Coast hold these economic advantages, are there still opportunities for new enterprises? Are the stands of timber all controlled, all bottled up? Some few of the best chances have already been exploited, yes, but to assume that these few cover the field is to admit being the sucker for a broadcast of misleading propaganda. Those who would investigate the Pacific Coast must choose carefully the sources of their information, demand facts, and look for themselves into statistics and actual conditions which indisputably show the Pacific Northwest Coast of America as offering today the greatest remaining stands of timber suitable for the manufacture of high grade pulps at low cost.



New

Pacific Coast Association of Pulp and Paper Manufacturers



RECOGNIZING the increasing number of problems of mutual interest confronting the growing pulp and paper industry of the Pacific Coast, a determined group of men, representing about two-thirds of the pulp and paper manufacturing organizations in the Western states, met at the Hotel Benson, Portland, on Tuesday, October 28th, and officially organized the "Pacific Coast Association of Pulp & Paper Manufacturers".

The purpose of this association will be to develop and safe guard the common interests of the Pacific Coast pulp and paper industry by enabling its membership to solve by joint consideration, problems of common interest, such as federal and state legislation, taxation, trade customs and practices including simplification and standardization, raw material, costs, traffic, waste utilization, research, safety, new uses and new markets for their products.

The association will endeavor to encourage legitimate and constructive methods of sales and distribution of pulp and paper products. It proposes to establish and

GEORGE W. HOUK
Elected President
**PACIFIC COAST
ASSOCIATION OF
PULP AND PAPER
MANUFACTURERS**



Boye Portrait, San Francisco

maintain cooperation with other similar organizations in the United States and the American Paper & Pulp Association. It contemplates among its other activities all things which may be done lawfully for the advancement and welfare of the industry.

Eligibility for membership in the new Pacific Coast

**Organized to cooperate
on mutual problems of
the Western industry**

Association is limited to any manufacturer of pulp and paper having bona fide mill operations in the states of California, Oregon and Washington. Operators of paper converting plants, who do not actually manufacture pulp or paper, but who only carry out some further process on the paper such as waxing or coating, are not eligible for membership in the organization altho the point was discussed at the meeting.

An initial set of officers and executive committee men were elected at the Portland meeting as follows:

President—George Houk, Hawley Pulp & Paper Co., Oregon City, Oregon.

Vice-President—Ossian Anderson, Puget Sound Pulp & Timber Co., Everett, Washington.

Secretary-Treasurer—Elmer Herb, Pacific Coast Paper Mills, Bellingham, Washington.

The three officers are ex-officio members of the executive committee. The other members of the executive committee of seven are: F. W. Leadbetter, Columbia River Paper Company; R. A. McDonald, Crown-Zellerbach Corporation; Max Oberdorfer, St. Helens Pulp & Paper Co.; and J. L. Murray, Everett Pulp & Paper Company.

A majority of the total membership of the executive committee must be present at any meeting which is to transact association business. In its present status the organization is somewhat voluntary in character. For a number of years it has been the custom of the manufacturers to attend the annual convention of the Pacific States Paper Trade Association at Del Monte, California. The manufacturers have of course met in unofficial capacity, but have found it convient to attend the trade convention when jobbers from all over the Coast were present.

The opportunity provided a chance for informal discussion of mutual problems and a renewal of comradeship. At the 1930 annual meeting of the Paper Trade Association the manufacturers present discussed the advisability of forming a Pacific Coast association for the manufacturing group. An informal meeting was held and a committee created. This committee drafted organization articles and their work eventually led to the meeting held at Portland on October 28.

For the present the association will employ no paid secretary nor collect any fixed dues. It is desired before expanding the organization to survey the field carefully and determine what real jobs the association can undertake. While it is understood that work of the



Here are five of the executives elected to direct the affairs of the newly organized Pacific Coast Association of Pulp and Paper Manufacturers. Upper, left to right: Max Oberdorfer, St. Helens Pulp & Paper Co.; F. W. Leadbetter, Columbia River Paper Co.; R. A. McDonald, Crown Zellerbach Corporation; (lower) Ossian Anderson, Puget Sound Pulp & Timber Company, and J. L. Murray, Everett Pulp & Paper Co.



association will eventually involve some finance, the question of dues has not yet been decided, altho it is probable a levy eventually will be made according to tonnage.

The organization will be made up of member mills, but each mill may send one or more executives to the meetings. Only one executive from each member organization will have a vote and when two or more executives attend a meeting the one who is empowered to vote must be specifically designated.

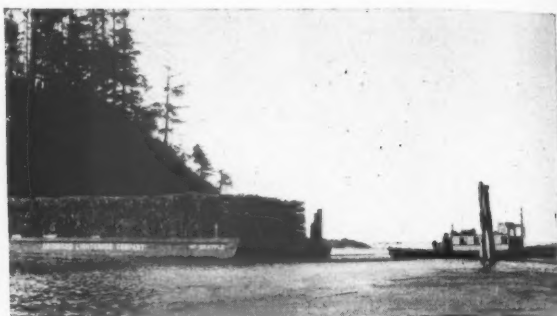
The organization meeting held at the Hotel Benson was a comparatively brief affair but it was decided at that time to hold a meeting on December 9 at the same place at 10:30 A.M. The executive committee will meet at 9 A.M. the same day and present its report to the general meeting. It is intended that the manufacturers' association shall hold an annual meeting at Del Monte, California in May in connection with the annual meeting of the Pacific States Paper Trade Association. By this arrangement the manufacturers will be able to take advantage of the double purpose attendance and, as the problems of the jobbers and the manufacturers have

many points in common, it is believed that the holding of the annual meeting will be very successful.

While the main purpose of the Portland meeting was the official organization of the manufacturers association and the election of officers, a number of other subjects were discussed, among them such matters as taxation, legislation, and trade practices. The matter of Russian pulpwood imports came up for discussion but no action was taken except a recommendation that members make a thoro study of the problem and be prepared for further discussion at the next meeting. In similar vein the problem of importation of Scandinavian pulp and accusations of dumping of this commodity were mentioned. This problem is to be given further study also.

The matter of traffic developed considerable discussion and it was agreed that here was a field which opened a large territory for cooperative effort. It was believed that eventually it may be desirable to develop a traffic bureau within the organization to specialize on this phase of the work.

(Turn to Page 34)



At the left is a sample of the surf from which shipping at present has no protection at Neah Bay, Washington. At right is a pulpwood tow starting out from Neah Bay for a paper mill. Pulpwood operations, which are now entirely suspended in the winter months, could be carried on continuously if a breakwater were constructed.

In need of PROTECTION

Pulp industry combines with other
interests to secure Neah Bay breakwater

NEAH BAY needs a breakwater, and needs it badly. Neah Bay, gentlemen, shows on maps that are not up to date as an isolated Indian village in the Makah reservation at the extreme northwest corner of the United States, the last bit of mainland seen by the thousands of ships that annually pass out of Washington's Puget Sound area and the busy ports of British Columbia, down the broad Straits of Juan de Fuca in intercoastal, trans-Pacific and other overseas trade.

Neah Bay, the village itself, strings along a couple miles of storm swept beach lying unprotected from the sweep of six thousand miles of angry ocean. As far back as 1897 the government recognized the need of some protection at Neah Bay for shipping. A report by the United States engineers in that year was favorable. Again in 1900 a more thoro examination was made and that time Captain Taylor, chief of engineers, said in his report, "In my opinion there is no river and harbor work now in progress in this state (Washington), or contemplated, as far as my knowledge extends, which is of so much importance to the general commerce of the state, as the construction of a harbor of refuge at Neah Bay."

A third examination and report made in 1912 was unfavorable, chiefly on the plea that the expenditure at that time would not be commensurate with the resulting benefits. The report did endorse the Neah Bay location, however, if a harbor of refuge were to be established in the Straits of Juan de Fuca.

In the 18 years gone down into history since that report of 1912 many things have happened which serve to put an entirely different economic complexion on Neah Bay. Here is no longer a straggling outpost of the vanishing Red man, but the operating base for industries which develop in toto many millions of new dollars in revenue for the Pacific Northwest. Not the least of these are the pulpwood operations.

The earlier reports made by the United States engineers considered the Neah Bay breakwater chiefly valuable as a harbor of refuge for vessels. Particular emphasis was placed on the need for a lying-in port to accommodate tugs and sailing vessels. Now the ships of wood and canvas have gone, but the shipping passing Neah Bay today is tenfold what it was in 1912.

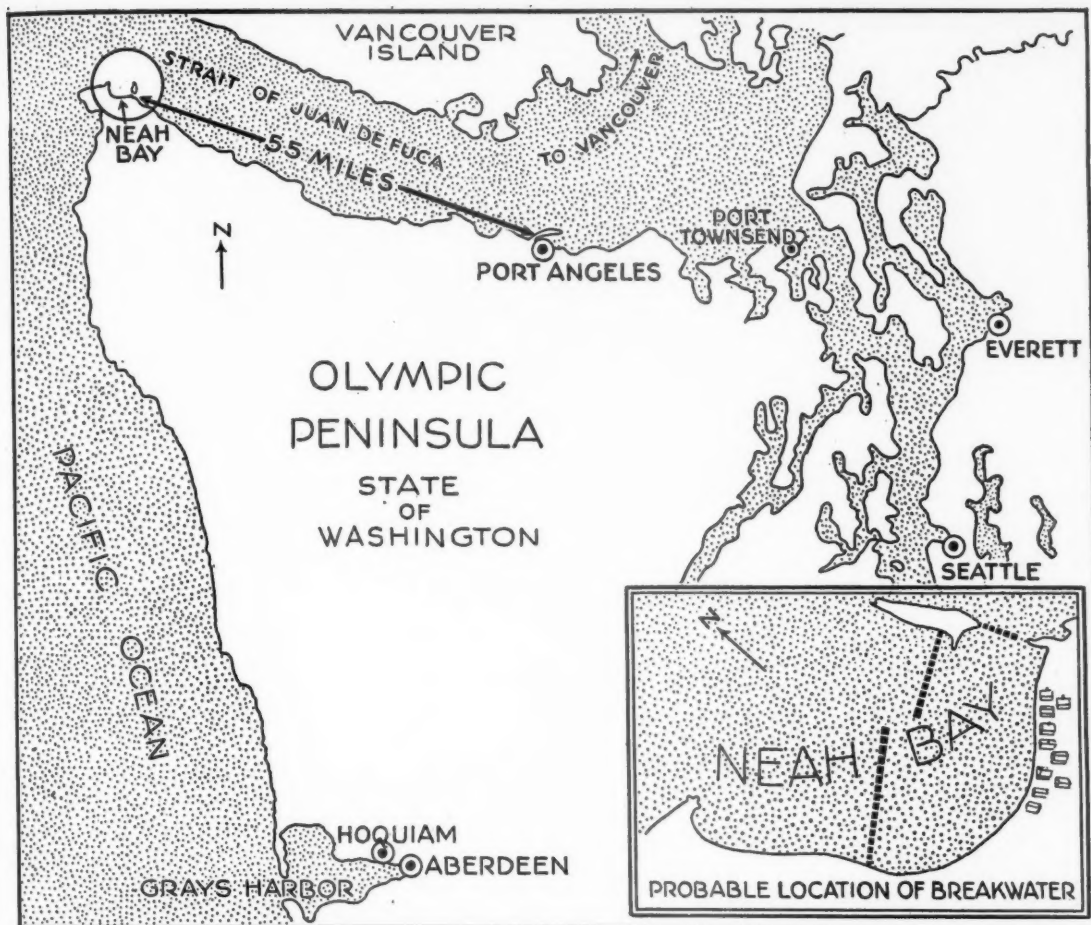
Tributary to Neah Bay is a stand of virgin timber, much of which is essentially pulpwood, estimated at more than four billion feet. Western Hemlock and Sitka Spruce, the Pacific Coast's prime pulpwoods, predominate. For several years now pulpwood cutting has been going on at Neah Bay, the cut in many instances running as high as 200 cords per acre. Timber here is perhaps as dense as anywhere in the world of pulpwood. The moist temperate climate permits rapid and ready reforestation.

WAR DEPARTMENT
United States Engineer Office
602 Burke Building
Seattle, Washington

November 7, 1930.

The public hearing scheduled for 2:00 P.M. Tuesday, November 25, 1930, in the U. S. Engineer Office, 602 Burke Building, Seattle, Wash., for the purpose of securing the views of interested parties in regard to the preliminary examination of NEAH BAY, WASHINGTON, with a view to the construction of a harbor of refuge, will be held in the Directors' Room, ground floor, of the Chamber of Commerce Building, corner of Third Avenue and Columbia Street, Seattle, Wash., at the time and date mentioned above.

JNO. S. BUTLER,
Major, Corps of Engineers,
District Engineer



Showing location of Neah Bay with respect to other ports and to the open sea, and (in small map) detail of Neah Bay

The Crown Zellerbach Corporation and allied interests own a huge block of timber tributary to Neah Bay. They have for some years been exercising cutting rights within the reservation. Much of this timber has gone out in cordwood form, but for the past year or more the company has operated a chipping plant there in addition to its cordwood operations.

The wood operations have been entirely at the mercy of the elements, in so far as transportation is concerned, so that work has been carried on only from six to seven months out of the year. The difficulty has been that, while towing itself is often feasible, it is extremely hazardous, if not entirely impossible, to hold tugs and barges for loading in Neah Bay during the fall and winter months. The effect is, of course, to increase costs, due to seasonal operation and risk.

A minimum of ten million feet of pulpwood is now being cut in the Neah Bay area annually for the Crown Zellerbach pulp mills, and this cut will be increased when working conditions permit the elimination of the seasonal character of the work.

But pulpwood is but one phase of industry, one source of revenue which seeks protection at Neah Bay. In the summer months Neah Bay is an extensively used haven for fishing vessels. In the waters off Neah Bay are untold millions in fish. Each year some 150 purse seine boats, out for salmon, base at Neah Bay. Some 300 or more salmon trolling boats, a half dozen fish storage and supply scows, cannery

tenders, oil boats, tugs and barges, and other craft lie in at Neah Bay. In fishing vessels and small craft there is represented in the Neah Bay summer fleet an investment estimated to exceed \$4,000,000.

This fishing fleet is entirely at the mercy of the elements. With the approach of the equinoctial storms in September the fleet pulls out, not to return again for some six months. Should a storm come up, as they do with suddenness quite often at Neah Bay in the winter months, there is no refuge, and the broken bones of many small vessels, to say nothing of the lives of men, have written into history the stern characteristics of this Coast.

One might add to this list the protection which a harbor of refuge at Neah Bay would mean to the thousands of ships which pass out to sea. There are on record 70 vessels—not including fishing vessels—wrecked or which have foundered near Neah Bay, taking a toll of 778 lives. It is pertinent to state at this point that the Coast Guard's life saving station at Neah Bay now finds great difficulty in launching its boats in rough weather, the time when such service is always needed. Their problem would largely be solved by a breakwater.

There is one further point, the military value of a harbor of refuge at this outpost.

Here, then, are economic values worthy of protection. What can be done? The pulp, fishing, tug and barge, shipping and other interests are joining hands

to point out the need of a breakwater which previous surveys have indicated as feasible, but not hitherto economically justified. Today that time of economic justification has arrived.

Neah Bay lies 55 miles northwest of Port Angeles, Washington, which last named point, lying in the protection of Nature's own breakwater, Ediz Hook, is on the American side, the last protected harbor for outgoing shipping, the first for incoming. The waters of the Straits of Juan de Fuca are deep, the shores are regular in contour, and afford no anchorage shelter. Neah Bay is the only point west of Port Angeles which offers possibilities of improvement where good anchorage may be obtained. In its present condition Neah Bay is not a safe anchorage, as it is entirely exposed and in heavy northwest weather the seas break entirely across the bay.

While the varied interests that are pressing for federal aid in the construction of the Neah breakwater are not attempting to dictate the engineering features, preliminary reports indicate the possible construction of two breakwaters extending toward each other, one from Waddah Island and the other from the mainland. A third breakwater, much smaller, would be constructed in behind the island.

The need for the breakwater is apparent. The pulp industry has a sizeable stake in the project and it is throwing its weight in with the various other interests. Action is next, concerted action. Congress, in the Rivers and Harbors Act of July 3, 1930, provided for a preliminary examination into the feasibility of the project. The next step is a hearing to be held in Seattle in the United States Engineers office. The date at this writing has been fixed for Tuesday, November 25, in the Chamber of Commerce Building, Seattle.

The Port Angeles Chamber of Commerce, which has an active committee working on the Neah Bay breakwater project, is trying to round up all interests so that complete data may be presented at the coming hearing. The Chamber maintains that—

"It is urgent that all interested parties prepare data pertinent to this proposed project, relative to estimated savings in lives, property and operating expenses to be expected as well as increased earnings to industry and shipping."

Pacific Coast Association

(Continued from page 31)

A resolution was unanimously adopted commending PACIFIC PULP AND PAPER INDUSTRY for the initiative the journal has shown in developing an interest in safety work in the Pacific Coast mills. The work of safety was also considered as an expansive field for cooperative action. It is probable that some uniform system of reporting accidents will be developed.

The association's newly elected president, Mr. Houk, interviewed after the meeting, expressed delight with the interest shown in the meeting of the organization.

"I am sure that the several points outlined as problems of common interest to the Pacific Coast manufacturers", said Mr. Houk, "will, when they are developed by further discussion, demonstrate the value of an association of this kind."

"The fundamental purposes of the Pacific Coast Association of Pulp and Paper Manufacturers justifies hearty participation and cooperation on the part of all mills on the Coast for the mutual benefit that they will derive."

UNITED STATES SENATE Committee on Interstate Commerce

Nov. 6, 1930.

Mr. L. E. Thorpe, Editor
Pacific Pulp & Paper Industry,
Seattle, Washington.

Dear Mr. Thorpe:

I have your letter of recent date and have read it with much interest.

I think it is highly important that the Treasury Department should protect American products against the dumping of products from Russia, and I believe they have full authority to do so under the present tariff law.

You can count on my active and aggressive support to all efforts to that end.

Sincerely yours,

C. C. DILL.

Russ Pulpwood Embargo Seems Likely

Mild sentiment against the dumping of Russian convict-produced goods in the United States is rapidly growing into a sweeping storm of protest against the indefensible attempt on the part of a handful of American enterprises to pit our standards of industry and wages against the confiscating methods of the Soviet.

PACIFIC PULP AND PAPER INDUSTRY has taken an aggressive part in the effort to revive the embargo. That its efforts have not been futile is indicated in the current trend of events. Above is a letter from Washington's Senator C. C. Dill, in which forceful expression there is assurance of immediate and positive action.

In an interview with Senator Charles McNary of Oregon, PACIFIC PULP AND PAPER INDUSTRY was verbally assured that one of the first acts upon the return of the senator to the national capital would be to visit the Treasury Department and personally investigate the rise and fall of the embargo.

Meanwhile the enterprising Secretary-Manager of the West Coast Lumbermen's Association, Col. W. B. Greeley, has gone to Washington to seek action on the Russian embargo.

As this is written the National Lumber Manufacturers' Association announce that the Treasury Department may soon issue regulations restricting importations of Russian lumber. They are hopeful the rules will be broad enough to become an effective bar to large future importations.

The association is contending for a blanket order prohibiting all importations from areas such as the White Sea and the Ural Mountains, where it is known or suspected that lumber is produced by convict or forced labor. Except where the importer may definitely show that labor of this character is not employed and also show that product is not subsidized by the soviet government.

Authority for halting importations of subsidized lumber is found in the law relating to equalization of costs in cases of export aid. This is said to be accomplished by Russia in shifting profits or losses from one industry to another.

Most recent figures of Russian lumber imports show 43,000,000 feet entered this year, about 5,000,000 more than at the corresponding date one year ago, not including about 280,000 cords of pulpwood.

As Others See Us

How Northern Europe regards the developing pulp and paper industry of America's Pacific Coast is learned in

An interview with

ALEKS LAMPEN, Managing Director
The Tornator Co., Ltd., Imatra, Finland

ALTHO we who are manufacturing wood pulp on the other side of the world have been aware of a developing pulp industry on the Pacific Northwest Coast of America in recent years, our knowledge of this development has been largely confined to published articles, statistics, photographs and other sources of second-hand information. It has been difficult to construct an accurate picture of the Pacific Coast development under these circumstances.

In making a trip to the United States at this time my specific purpose was to witness at first hand the pulp and paper development on the Pacific Coast, to see the character of this development and to survey those factors which gave it substance. My training has been both in the fields of science and engineering, and business. In this visit, therefore, I have been interested in methods of operation as well as in general economics.

This visit has given me a picture of Pacific Coast pulp development such as I never could have conceived except by personal observation. It is quite impossible to visualize the character and magnitude of the development otherwise. What I have seen has convinced me that the new pulp industry developing here has already established itself as an important factor in the world's markets. The newer mills, in point of design, construction, equipment, and method of operation, are to be ranked with the best the pulp industry has to offer on any part of the globe. Pulp grades are now being produced which are in active competition with the highest grades from other world sources. The abundance of raw material—pulpwood—on which the Pacific Coast industry rests, is quite amazing, and indicates an ultimate development in the Pacific Coast forest region of one of the most important of the world's pulp manufacturing centers.

My observation of Pacific Coast conditions and methods was necessarily weighed against the background which identifies pulp manufacturing in Finland and other countries of Northern Europe. One of the greatest differences is, of course, in the wood itself. On the Pacific Coast your conditions are much different due to the density of the forest stands, the immense size of the trees, and the topography. In Finland the trees do not reach the great size attained on the Pacific Coast of America. Here, in your logging, you resort to heavy equipment to handle the big logs in quantity, and to expensive railroad construction

Mr. Aleks Lampen is Managing Director of the Tornator Company, Ltd., of Imatra, Finland. The company is a good example of the integration of wood-using industry so commonly found in Northern Europe. The enterprise includes a pulp and paper mill, a sawmill, and a spool and bobbin factory.

The first named unit consists of a groundwood pulp mill of 15,000 tons annual capacity, a sulphite pulp mill of 24,000 tons annual capacity, and a three-machine paper mill making grease-proof and other wrapping papers.

Of the pulp not consumed in its own paper mill about 19,000 tons of sulphite and 6,500 tons of groundwood are sold annually. The company was founded in 1887 and has several times been expanded.

Mr. Lampen received a thoro training in mechanical engineering and chemistry in the technical institutions of Finland. In addition to this academic training he has had many years of practical operating experience.

He has traveled extensively and is thoroughly familiar with the pulp and paper industry of Northern Europe. He is a director of the company and is also head of the organization's technical operations.

Because Mr. Lampen has traveled many thousands of miles to study the growing Pacific Coast pulp and paper industry at first hand against his background of experience, it is believed his views on the present and ultimate significance of the Pacific Coast development will be of particular interest.

through fairly rough country. In getting out the wood in Finland we haul a few miles to a stream and make extensive use of the rivers for driving the wood to the mills. Your average wood costs appear to be considerably lower per ton of pulp than we enjoy in Northern Europe.

A chief difference between pulp manufacturing on the Pacific Coast and in Northern Europe is found in the character of the wood and in the methods of preparing it for the digester. Your sawmill waste, as you know it here, is not at all the same thing as we know it in Finland. There, due to the smaller size of the logs, much of the lumber is cut by frame saws, under which the log passes but once. There is, of course, some refuse in any lumber production, but under Finnish conditions the sawmill waste does not offer the abundance of large pieces from which suitable pulpwood can be reclaimed, such as seems to be quite the common practice on the Pacific Coast.

The size of your Pacific Coast trees provides an abundance of clean, sound wood in large pieces. It was most interesting to note the methods used in this region for breaking open the large logs. The large trees seem to be much freer of small black knots than the trees we use in Finland. The Pacific Coast pulp

that I have seen seems to be of remarkable cleanliness, due largely to this absence of small knots.

If I might offer a criticism, it is that you have too much wood. Too much of anything encourages an improper valuation and a tendency to waste. However, your supply seems to be so extensive that it seems cheap wood will be available for your mills for a long time, but perpetuation of the industry must, of course, rest on a continuous and permanent source of pulpwood.

Among the Pacific Coast mills visited on the present trip were those of the Hawley Pulp & Paper Company and the Crown Willamette Paper Company at Oregon City, Oregon, the Columbia River Paper Mills at Vancouver, Washington, the Spaulding Pulp & Paper Company at Newberg, Oregon, the Puget Sound Pulp & Timber Company at Everett, Washington; the Grays Harbor Pulp and Paper Company at Hoquiam, Washington, and the St. Regis Kraft Company at Tacoma, Washington. In these mills I believe I obtained a fair cross section of the pulp and paper industry in the Pacific Coast region and at the same time saw some of the newest and most modern of the mills.

Attention to Details

One thing that impressed me here was the great number of flat screens used for refining the pulp. Use of such extensive screening surface on pulp which comes from wood which is quite free from black knots in the first place, naturally results in pulp of exceptional cleanliness.

It is apparent also that your newer Pacific Coast mills are giving careful attention to the technical details in manufacture and are striving to produce high quality under the careful supervision of the chemist and technician.

In Finland there is a close cooperation between the different pulp mills of the country. This cooperation extends to the marketing of the product as well as to the mutual development of operating technique and the pooling of scientific knowledge. All of the pulp mills in Finland, with only one exception, belong to the Finnish Cellulose Union. Then we have also the Central Laboratory of Finnish Industries, which is an extensive organization which acts somewhat as a clearing house for technical information. The Laboratory has been a most important factor in the development of the Finnish pulp industry, and it is well supported by the mills of the country.

Finland Reforests

Another point of interest in contrasting your pulp industry with that of Northern Europe is the difference in operating conditions occasioned by the difference in climate. Here you seem to have a much favored climate. Finland is far north and in order to keep its shipping open in the winter powerful ice breaking tugs must be kept going. This is a factor which, of course, adds to costs.

In matters of forestry Finland apparently has developed a policy of more complete utilization and of reforestation. In Finland, reforestation is considered vital. When an area is logged it must be promptly and properly restocked. The burden of responsibility is put upon the owner of the land and on the logger. We have established a careful governmental supervision in these matters which prescribes the manner of logging each plot, provides for leaving seed trees, checks after the logging has been completed to see that conditions have been properly met. This policy of reforestation extends over all classes of forest land, whether under

private or government ownership. Our pulpwood forests restock themselves naturally and readily as a rule, but if Nature fails them the government places responsibility and enforces artificial reforestation. On this point the law is stringent, for idle land is not tolerated.

It has been most interesting and profitable to visit the developing pulp manufacturing industry of the Pacific Coast of America. I return home convinced that here is a pulp region which is world important and with great potentialities. The many courtesies extended to me by the personnel of the Pacific Coast mills are greatly appreciated.

News Print Very Much on the Fence

As a result of the new schedule announced by Powell River Company and Crown-Zellerbach Corporation the Pacific coast becomes the lowest prize zone in the newsprint market on the continent. The \$58 a ton base price is comparable with \$62 in New York and \$61.50 in Montreal and Toronto.

Officials of both the coast newsprint companies do not see how there can be any further scalping down of this price as it represents the lowest figure at which operations can be continued at even a slight profit.

The situation in eastern mills becomes all the more difficult when it is understood that they have been producing at only 71% of rated capacity in Canada and 78% in the United States during the first nine months of the present year. Practically all the mills are capitalized on a 100% production basis.

In the belief of coast newsprint executives, a pool now actually exists among eastern producers although its formation has not yet been definitely announced since Col. John H. Price resigned as chairman of the Canadian Newsprint Institute, thereby virtually placing the affairs of this body in the lap of the gods.

Negotiations with a view to effecting important mergers in the industry are now under way. There is a growing opinion that the merging of Abitibi and Backus-Brooks interests will take place first. A giant merger embracing Canada Power and Paper, Abitibi, Backus-Brooks, Canadian International and St. Lawrence Corporation does not appear to be imminent. Many obstacles are said to be in the way of such a development, the chief one being the objection of bankers to the values stated for one of the companies involved.

Tonnage is the principal worry of the producers. The matter of increasing the price is described as a dead issue just now. The Newsprint Institute, according to its critics, has outlived its primary purposes. It went "bankrupt" when two of the producers started the move last fall to increase the price. The Institute was also given a black eye by the inquiry of the United States Federal Trade Commission.

Two factors are prominently mentioned at this time, namely, weeding out of high cost mills and readjustment of capitalization. It may be that some of the mills may be converted to the manufacture of products other than newsprint.

Loggers Visit Powell River

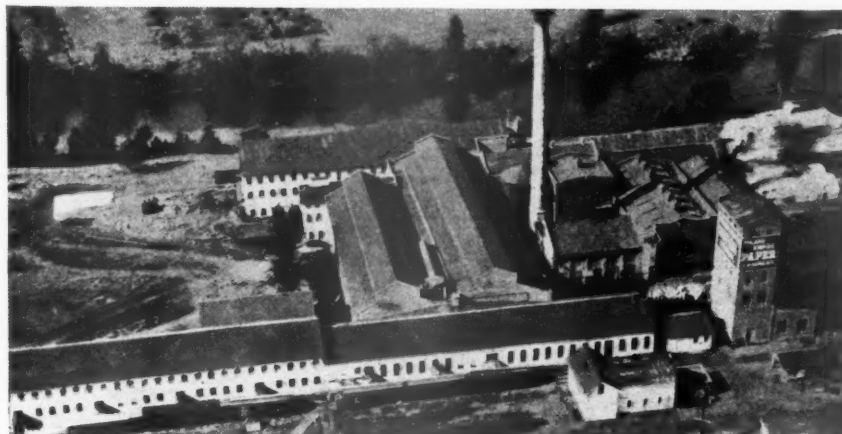
Delegates to the Pacific Logging Congress, held this year in Victoria, B. C., included Powell River on the itinerary of their visit to British Columbia. They were escorted over the Powell mill by R. Bell-Irving, manager, and A. W. Deland, logging superintendent. Mr. Deland was elected a member of the executive committee of the Congress.

Inland Empire Mill Improving

The Inland Empire Paper Company, operating a plant at Millwood, Washington, has authorized a first and general mortgage bond issue of \$600,000, and with the public offering of \$350,000 of this amount has begun work on an improvement program which will absorb a substantial portion of the new funds.

The building program does not involve so much an addition to capacity as an improvement in present plant. The present finishing room will be extended and improved to facilitate handling of roll and sheet product. In the wood room a better means of handling the logs will be provided by a circulating pond of water. The work also includes a new grinder room and some new stock tanks to augment the company's present system of handling slush pulp.

The Inland Empire
Paper Company
at Millwood, Washington,
is carrying on
a program of
expansion and improvement.



The Austin Company has the contract. Work will be completed within a few months.

The Inland Empire Paper Company was incorporated in 1910 and has been engaged continuously and increasingly in the manufacture of news print, poster, and other grades of paper. Its plant includes a sulphite pulp mill, mechanical pulp mill, and paper mill. It employs about 300 men and has an annual payroll approximating \$500,000.

The plant occupies a 50-acre site on the Spokane River at Millwood, a small community about 15 miles out of Spokane. The company has a power site at this location capable of being developed into an estimated capacity of 4,000 h. p. In addition, it owns extensive reserves and riparian rights on the Spokane River.

The present manufacturing plant is capable of producing 115 tons of newsprint each day of 24 hours and this year has averaged 114 tons daily. The buildings are mainly of fireproof material. The company has consistently added improvements and betterments to its buildings and machinery to meet modern requirements. It owns all of its yard tracks and connecting lines with three transcontinental railways which serve it, including the motive power and necessary equipment.

Timber Supply Unlimited

The available supply of timber such as is used by the company for the manufacture of pulp is virtually inexhaustible. It secures its principal supply from many different producers. The species used are white fir, hemlock and spruce, which are drawn mainly from eastern Washington, northern Idaho, western Montana and British Columbia.

The assets of the company are appraised at more

than \$3,000,000 and the only funded debt other than the one now authorized of \$600,000 is \$150,000 of an old loan which falls due in the next two years.

The company's earning record has been a remarkable one, its product is high grade and is distributed throughout the Northwest and through the Middle West, including Nebraska and as far south as Oklahoma and Texas. The management of the company is in the hands of men of long experience in paper mill operations.

Officers and directors of the Inland Empire Paper Company are: Judson G. Rosebush, Appleton, Wis.; W. H. Cowles, Spokane; L. M. Alexander, Port Edwards, Wis.; Waldo Rosebush and W. A. Brazeau, Millwood; J. E. Alexander, Port Edwards, Wis., and W. H. Cowles, Jr., Spokane.

Pacific Strawboard Widens Activities

Evidence of increasing activity at Longview, Washington, is seen in the public offering of \$100,000 of convertible 6½ per cent gold notes to provide funds for expansion of Pacific Paper Materials Company, a subsidiary of the Pacific Straw Paper & Board Company, operating a 40-ton board mill. Charles F. Schaub and George A. Sweet, president and secretary-treasurer of the parent company, hold like offices with the subsidiary.

Pacific Paper Materials Company owns and operates a small groundwood pulp plant in conjunction with the board mill at Longview, in addition to a chain of waste paper collecting depots.

The subsidiary company is capitalized for \$25,000 Class B \$1 par voting stock, of which all but 1,339 shares are held by parent Pacific Straw Paper & Board Company, also \$100,000 of Class A \$1 preference stock, all of which the company will hold in its treasury for gold note conversion purposes. There are no mortgages senior to the gold note issue. The Class A stock is entitled to 6% preferential dividends then participates equally with Class B control stock up to 10% dividends. While earnings of Pacific Straw Board never have been given publicity, the company has operated steadily at better than average capacity since first beginning manufacture in the Spring of 1926. A number of plant improvements have been carried out in the interval.

The company's products have been expanded from an original two or three items, such as plain chip, to 54 different items. Likewise its market has been expanded to include a considerable export as well as Pacific Coast business.

Taking the humps out of

THE STEAM LOAD

A discussion

By RAY SMYTHE, Manager
Willamette Iron and Steel Works, Portland

How to make the pulp mill and boiler house superintendents friendly



STEAM, in so far as that commodity has been part and parcel of industry in the Pacific Northwest, has not yet been elevated to the distinction of being spelled "steam". In general, there has been lots of steam at small cost, and in some cases uncharged cost, and its very abundance has kept it out of the realms of discussion. It is reasonable to predict, however, that rising steam costs, together with increasingly stringent demands for industrial operation of the highest efficiency, is going to get steam a hearing in this Pacific Northwest at no distant date.

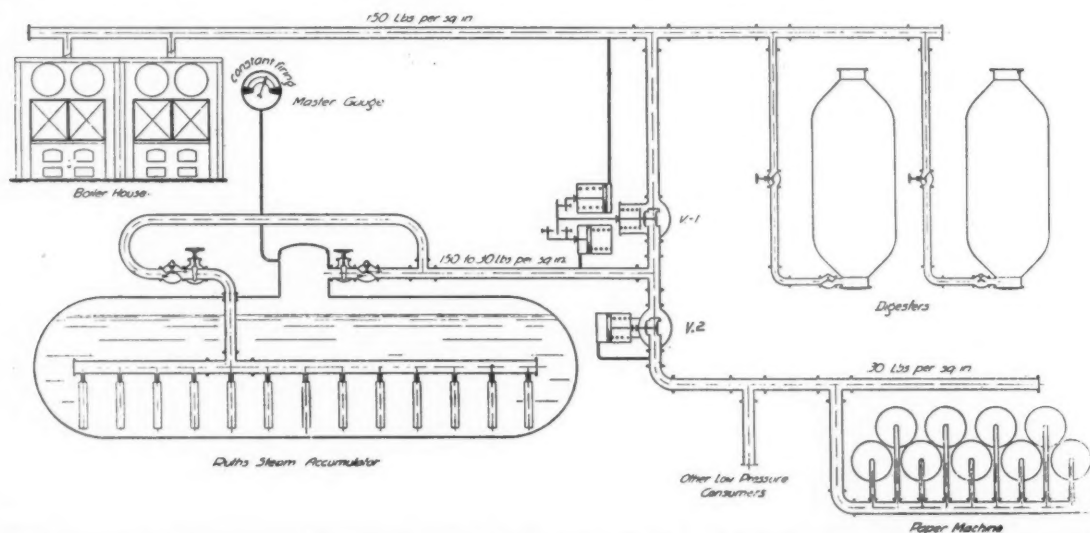
My subject at present is the steam accumulator. Not new, but still a "quantity X" as far as the pulp and paper industry of the Pacific Coast is concerned.

In the course of the World Power Conference held

in Berlin during the past summer some 800 delegates visited the Charlottenburg Power Plant in that city because of its unique character. This plant employs 16 steam accumulators 14' 9" in diameter by 69' high, built for 185-pound maximum working pressure.

While this type of power plant steam accumulator has not yet been introduced into this country, there are many installations in North American industrial plants. Fifteen paper mills in the United States and Canada have steam accumulators. In paper mills all over the world there are 155 accumulators. The world's total accumulator installations in all types of plants is 450. As yet the Pacific Coast has no accumulator installations, but the near future will see some.

The purpose of a steam accumulator is to store steam. Hot water is used as storage medium. Steam is introduced into the water, is condensed, and the temperature of water, and consequently the pressure, goes up. The accumulator is being charged. When the accumulator is being discharged a certain amount of the heat stored in the water is used for flashing some of this water into steam again.



In this diagram of a steam accumulator system installed in a paper mill valves V-1 and V-2 provide automatic operation, charging the accumulator or discharging it according to steam load. The boilers are fired at a practically constant load. The rate of firing is indicated by the accumulator master gauge mounted in the boiler room.

The accumulator, of course, has to be connected between a high pressure line and a low pressure line so as to make possible pressure and temperature variations, else there would be no storage capacity available.

Steam accumulators are installed to balance fluctuating steam demands. In a paper mill, for instance, the fluctuating steam demand of the digesters causes difficulties in the boiler house, resulting in serious disputes between digester house and boiler house superintendents. A steam accumulator usually makes friends of the two superintendents. It is a real peace-maker.

The steam accumulator takes care of fluctuations in the steam demand by storing steam at times of off-peaks and discharging steam at times of peak loads. In other words, the steam accumulator is like a fly-wheel for the steam plant and makes the manufacturing departments independent of the boiler plant.

The automatic operation of a steam accumulator plant is made possible by an ingenious arrangement of pressure controlled, oil-operated regulating valves. By different arrangement of these valves, an accumulator can be introduced into almost any plant. We will not go into the theory of the accumulator now, nor show the many different arrangements of the accumulator. As a rule, it is necessary to make a careful study of each individual plant before making recommendations as to the best accumulator arrangement.

Fewer Boilers

To give you an idea of what the accumulator can accomplish let me cite the Anheuser-Busch plant at St. Louis as an example. With the installation of an accumulator this plant has been able to operate with 11 boilers instead of the original 12, the fluctuations in steam demand have been eliminated, and the boiler pressure has been maintained constant.

Charts were taken to show the boiler pressure with 11 boilers and the accumulator on the line. The accumulator pressure, of course, fluctuated very much but the boiler pressure was maintained constant at 145 lbs. and the low pressure maintained constant at 30 lbs. The accumulator pressure varies between these two pressure limits. When there is a peak demand the accumulator pressure drops because make-up steam is supplied for

the process. When there is an off-peak the accumulator pressure rises because the surplus steam is stored in the accumulator.

A steam accumulator contains a very large amount of heat energy. There is no danger, however, of this energy being unduly released. The tank is built with a high factor of safety, and according to the A.S.M.E. Code. In addition, there are a number of other safety arrangements.

Because with a steam accumulator the boiler pressure is automatically maintained constant, the operation of the boiler will not be performed in accordance with the boiler pressure any more. Instead, there is a large master gauge in the boiler house showing the accumulator pressure.

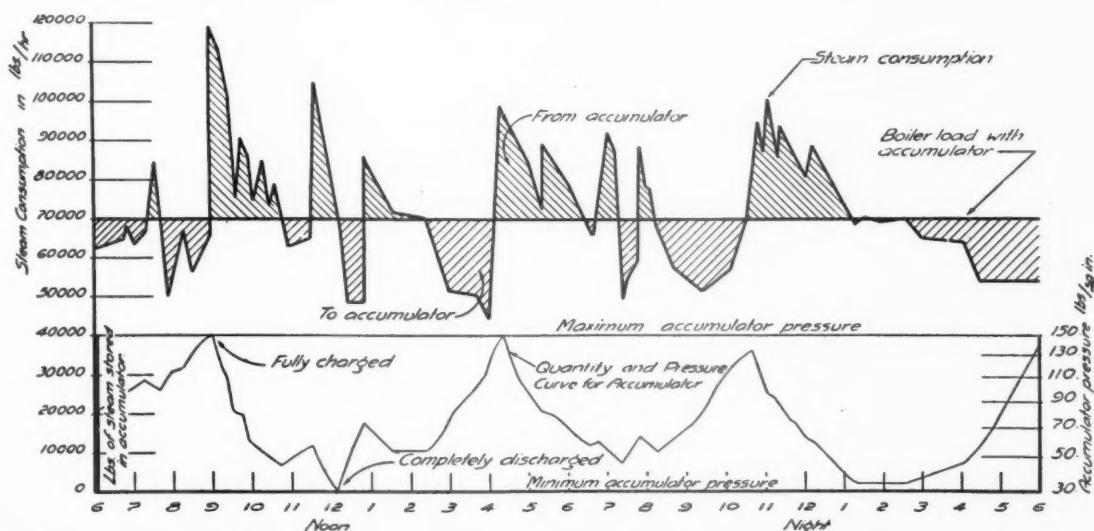
As long as the pointer of this gauge is in the field marked "Constant Firing—Let Pressure Vary", it will not be necessary to do any regulation at all in the boiler operation. Only when this pointer comes near the field of "Increase" or "Decrease" will it be necessary to increase or decrease the output from the boilers.

Constant Firing

In many plants equipped with accumulators, stokers are operated at a speed corresponding to average steam demand for hours without any changes at all in the rate of firing.

A typical installation in a paper mill is at the Canadian International Paper Company at Hawkesbury, Ontario. This is the fifth accumulator installed by this company. The regulators control the steam flow to the digester, pulp driers, etc., are all oil operated and are very sensitive and reliable. The whole accumulator system needs hardly any attention. In many of the mills the regulating valves in an accumulator system are started up at the beginning of the week and not touched before the end of the week when the mill was shut down.

The Price Brothers & Company at Riverbend, Quebec, have a unique installation for Canada as all of the steam is generated in electric steam generators and an accumulator was found to be a necessity. About 90,000 kw. is used for steam generation. In this plant, without an accumulator, the boiler pressure varied between 160



This set of curves shows the performance of a steam accumulator installation. The steam quantities shaded from lower left to upper right are supplied by the boiler house, which is operated at constant rating, in excess of the demand. The areas

shaded from upper left to lower right are peak loads supplied by the accumulator. The curve below shows how the pressure fluctuates in the accumulator and the same curve also represents, in a different scale, the amount of steam stored at each moment.

lbs. and 70 lbs. With an accumulator, this variation was entirely eliminated and the accumulator proved its worth from every standpoint.

It is not only in plants with electric boilers that the accumulators have proven to be such a great help. At the Algonquin Paper Corp., Ogdensburg, N. Y., operating with four boilers and no accumulator the pressure varied between 135 lbs. and 165 lbs. These pressure variations caused difficulties with the turbine driving the paper machines, resulting in frequent breaks of the paper. After installation of the steam accumulator the boiler pressure was maintained constant at 155 lbs. with one boiler less on the line. The paper machine speed was increased from about 740 ft. to 850 ft., the quality was improved and they had many less breaks than before. The boiler maintenance was greatly reduced and the steam cost dropped from 45c per 1,000 lbs. in 1926 to 31c in 1929. They claim they could not exist without the accumulator and say that they are better off with four boilers and an accumulator than they would be with six boilers and no accumulator.

Use Cheaper Fuel

Several plants equipped with steam accumulators have been able to burn a cheaper grade of coal than before, because they had no sudden peaks to take care of. The less flexible the fuel the more benefits of a steam accumulator. Now, wood refuse is a very inflexible fuel and therefore the paper mills of the Coast should offer very good applications for steam accumulators.

The Bogalusa Paper Co., Bogalusa, La., was burning only wood refuse a few years ago. In addition, they had mostly cheap, colored labor which made the wood refuse still less flexible. The boiler pressure usually varied between 150 lbs. and 100 lbs. After the installation of the accumulator the pressure has always kept at 150 lbs. The only disadvantage was that the colored firemen got still lazier, but with the accumulator on the line they could afford it. The wood refuse now is getting more scarce and valuable at Bogalusa so that they are partly burning pulverized coal. That makes the boiler plant a little more flexible than before.

The Waldorf Paper Products Co., St. Paul, Minnesota, have a steam load of about 100,000 lbs. per hour which is carried on one 1,300 h.p. boiler operated at 650 lbs. per sq. inch pressure. All power is generated from process steam in a non-condensing turbine and balance is maintained between power and steam demands by means of the accumulator. There has been much written in technical magazines about this plant and it has been considered as one of the most modern high pressure steam plants in the industrial field.

Intangibles

The load on the boiler varies only between 80,000 and 100,000 lbs. per hour. Because of the accumulator the boiler was made 250 h.p. smaller than was first planned. The accumulator also serves as a desuperheater and is the most effective desuperheater on the market. The back pressures of the two non-condensing turbines were maintained very constant by means of the accumulator valves. The main benefit of the accumulator is the smooth operation of the whole plant and especially the constant pressure on the paper machines which has considerably enabled them to increase the speed of the machines.

The Northern Paper Mills have recently installed and started operating with a steam accumulator and very good results are being experienced. There are several pulp mills on the Coast at the present time that

can use accumulators to advantage. Several of the mills recently built have anticipated the time when accumulators would be necessary and their installation has been planned for.

The benefits from a steam accumulator are so many and some times rather intangible that it is difficult to express all of them in dollars and cents. Increased boiler capacity, increased fuel economy, balance between power and steam demand, reduced maintenance, smoother operation of the whole mill, and increased production are some of the benefits. The steam accumulator is not an auxiliary to the steam plant, it is an assistance to the whole mill. That explains why accumulators have been installed in 155 paper mills.

Editor's Note: This discussion on steam accumulators is a revised edition of an illustrated talk given by Mr. Smythe at the Fall meeting of the Pacific Section of TAPPI at Portland, October 11, 1930, as part of his report as Pacific representative of the Equipment Committee of TAPPI. Mr. Smythe advises that the data used in the article were originally prepared by G. E. Lofgren, chief engineer of Ruths Steam Storage, Inc., New York City.

Pack Fellowships Will Train Forestry Leaders

Eight fellowships for the training of leaders in forestry have been awarded for the year 1930-31 by the Charles Lathrop Pack Forest Education Board, and the Board is preparing to receive applications for fellowships for the year 1931-1932. The fellowships already granted cover a wide range of practical and theoretical forestry, including reforestation, management of private forest estates, cooperative marketing of forest products, silviculture management, and forest pathology.

Six to eight fellowships, with stipends ranging from \$500 to \$2,500, are available for the coming year. The purpose of the fellowships is to encourage men who have shown unusual intellectual and personal qualities to obtain training that will best equip them for responsible work, either in the general practice of forestry, in the forest industries, in the teaching of forestry, in forest research, or in the development of public forest policy. Applications will be received not later than January 15, 1931. Details can be obtained from Ward Shepard, Secretary of the Charles Lathrop Pack Forest Education Board, 1214 Sixteenth St., N. W., Washington D. C.

Progress Slow on Rice Straw Mill

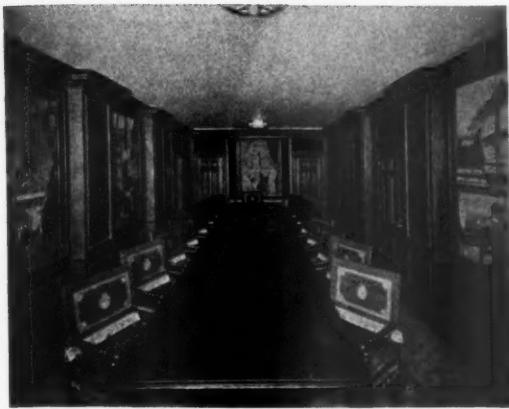
Recent reports from Richvale, California, near Chico, indicate that a small amount of construction has been undertaken by the Pacific Coast Pulp & Paper Corp., which proposes a small pulp and paper mill to utilize rice straw. While some excavation work has been done and some concrete poured present work, at latest reports, is practically at a stand still.

Executives of the company have indicated that the mill will be completed and in operation by the spring of 1931. Five buildings are proposed. The total cost of the mill with equipment is estimated to be about \$500,000.

D. M. Thomson, Santa Monica, California, is president.

Norwegian Pulp and Paper Industries Depressed

A recent radiogram from Commercial Attache Lund, Oslo, reports the Norwegian pulp and paper industries as increasingly affected by the world wide business depression. Stocks on hand are reported to be fairly large, and several mills recently announced indefinite shut-downs.



Here is where the Crown Zellerbach Corporation transacts its official business. This attractively designed Board room is decorated with a series of beautiful murals depicting the development of the paper industry from early times to the present day. The Board room is but one of the many well appointed offices in the modernized Crown Zellerbach Building, San Francisco.

Salem Mill Gets O. K. on Street Vacation

Following a local squabble that dragged thru several months the Oregon Pulp & Paper Company has finally won its plea for the vacation of a 43-foot strip on Trade Street, adjoining its 110-ton bleached sulphite specialty mill in Salem, Oregon. Authorization was finally given by the city council over the mayor's veto.

Petition for the vacation aroused a faction which opposed the grant. Subsequently there developed a counter movement which circulated petitions favoring the company's request on the plea of enlargement of the mill and consequent enlargement of the payroll. Most of the names were eventually withdrawn from the "anti" group, but some few remained unalterably opposed to the very last.

The company, in seeking the vacation, said that it wished to use the space to build an addition to house its finishing and warehouse departments, the cost to be about \$60,000. Work on that addition is to begin soon, it is indicated.

Coupled with the street vacation were other angles concerning the suppression of a cinder nuisance charged to the paper mill operations due to inefficient steam plant. As part of the bargain with the city authorities to vacate the street the paper company gave a bond to insure the installation of cinder cones to abate the cinder nuisance.

F. W. Leadbetter is president of the Oregon Pulp & Paper Company.

Weyerhaeuser's New Pulp Mill

In their characteristic undemonstrative way, unaccompanied with fireworks, the Weyerhaeuser Timber Company is proceeding quietly with plans for the construction of a 150-ton sulphite pulp mill at Longview, Washington. Plans of this company, rated one of the most extensive of timber holders, loggers and lumber operators in the country, to enter the pulp field were outlined in a previous issue of PACIFIC PULP AND PAPER INDUSTRY.

At the preset writing the major details of the mill had not been definitely decided. Contracts for equipment had not been placed with the exception of the six digesters which are to be built by the Willamette Iron & Steel Works of Portland.

Plans for the mill are being developed in the con-

sulting offices of O. C. Schoenwerk of Winnetka, Illinois. Mr. Schoenwerk has been identified with the construction of several of the newer Pacific Coast mills, both pulp and paper, and is able to draw upon considerable practical experience in the Pacific Coast field.

The general plans of the Weyerhaeuser Timber Company are under the direction of F. R. Titcomb, general manager. He has recently been absent from his Tacoma offices to confer with Mr. Schoenwerk.

Meanwhile one of the younger generation of Weyerhaeusers is taking an active hand in the formation of plans for the new mill. This man is Carl Weyerhaeuser, who not so very long ago came to the Pacific Coast from Minnesota.

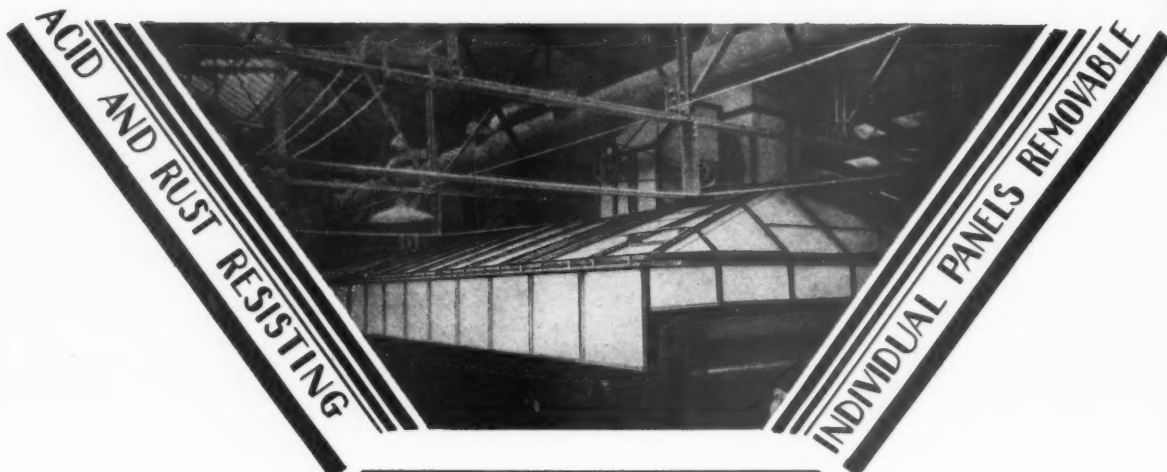
The new pulp mill is to be built on the huge site of the Weyerhaeuser Timber Company at Longview, Washington, on the Columbia River. The site is directly served by deep sea shipping and has physical connection with main line railroads. As pointed out recently by Mr. Titcomb, Weyerhaeuser is going into pulp manufacture as a matter of economic necessity. There is a considerable waste attached to the operation of such an extensive sawmill plant as they conduct at Longview, and the increasing percentage of Western Hemlock to be found in the stands on the upper slopes is changing the operating picture. Establishment of pulp manufacturing activities in connection with logging and lumbering provides an outlet which can absorb this waste with economic advantage.

A COMMON SENSE PLATFORM

Advice on what-to-do-to-restore prosperity is generally accepted as the thing to do, but you and I believe that the advice is for the other fellow and, as the suggestions are broad and lie beyond the ends of our noses—and, besides, our case is somewhat different anyway, you see—said advice gets filed in the wastebasket.

Below, however, is a program of common sense which the executive can afford to put under the glass on his desk, adopt now, and STICK TO IT when times begin to get a little more flush. Just horse sense, and right on the end of the nose. Here they are:

1. Gear production closer to demand — learn the method now — and keep it up always.
2. Increase the efficiency of the organization, cut out all unnecessary overhead, keep the best workers, all of them, even if their pay is highest. Keep as large a force as you will need later and save the cost of hiring and training. Cut hours, if necessary, and keep them cut, if necessary.
3. Get rid of all selling frills.
4. Stop bribery.
5. Cut distribution costs and keep them cut.
6. Don't set up impossible and ever increasing quotas.
7. Make a fair profit on every order you get.
8. Eliminate wasteful trade practices.
9. Study your business continuously.
10. Keep your dealers by giving them a square deal.
11. Keep your customers by maintaining quality, and give them more real value for their money than your competitors.
12. Get together with the other fellows in your line and commiserate with each other; keep yourself dry—and then do something about it.



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Moyer & Pratt
*Oxford Paper Co.
Puget Sound Pulp & Timber Co.
*Reading Paper Mills
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Thousands of pounds of coffee being packed for the market in fibre containers by a Pacific Coast firm. The conveying equipment in this instance was designed and installed by the Link-Belt Company



Photo courtesy of Hills Bros.

The export market puts an O. K. on the Fibre Container

WHO cannot remember the little corner grocery store with a pile of wooden packing cases in the rear that made such fine kindling, and such good sticks for whittling? The little corner grocery store may still be there but the pile of wooden packing cases has largely been replaced by fibre containers—a movement that has all the swiftness of a tidal wave, for ten years ago only about ten per cent of canned goods and raisins were shipped in fibre containers in domestic commerce, while ninety per cent were shipped in wood. But those ten short years have definitely swept fibre into favor in the reversed ratio of ninety per cent fibre and ten per cent wood.

Heretofore fibre containers have been used principally in domestic shipments, but recently a Western fibre container company made an experiment that will have far reaching results, not only for the Pacific Coast but for the entire nation. Immediately after the Pacific-European Steamship Lines removed last February the penalty or upcharge of the extra 15 cents per 100 lbs., which has previously been charged when fibre cases were used for shipments, this firm sent a representative to Europe. He has visited England, Wales, Scotland, France, Germany, Sweden, Denmark, Holland and Belgium where he has conducted a complete campaign of education and instruction as to the proper methods for discharging ships' cargoes and handling in subsequent traffic, fibreboard cases of canned goods and raisins. This work has had the co-operation of the principal steamship lines through their United Kingdom and European offices and is said to have been quite favorably received by all cargo and freight handling interests.

The economies of the fibreboard case for export shipment, are, of course, even greater than for domestic use. All wire tying and iron strapping is eliminated and the reduced tare weight is a considerable saving in ocean freight and other European handling charges.

This would seem to be a real answer to the crying need for reduced distribution costs.

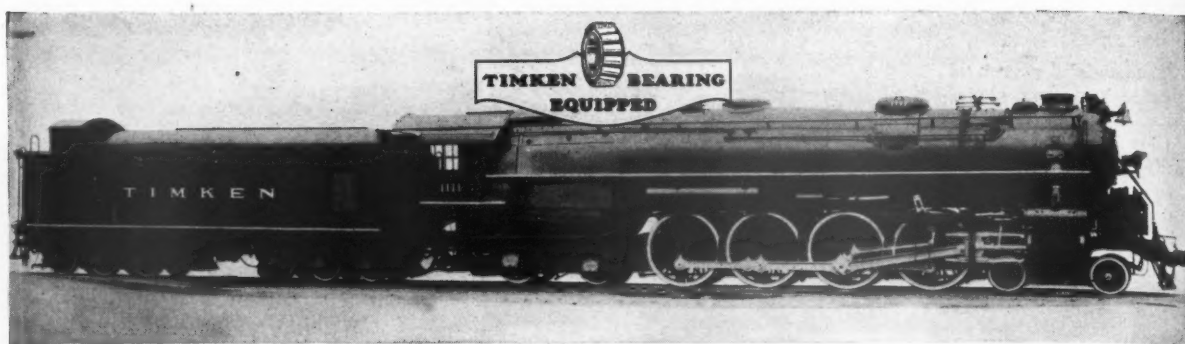
Canned pineapple from Hawaii, salmon from Alaska, fruits, vegetables and raisins from California, Oregon and Washington are now being safely distributed abroad in fibreboard cases. One of the largest packers has adopted the fibreboard case for 100 per cent of the export shipments to many foreign ports; several other packers have changed over to fibreboard on a number of items in their pack, and it is expected their entire line will soon be uniformly shipped in fibreboard cases for export as well as for domestic trade.

From this it will be seen that the big new field for the fibre container is in export shipping. The feeling in Europe, according to one shrewd observer, has been that fibre containers cannot be used for export shipments. However, some of the largest American manufacturers have for years been using fibre containers for transatlantic shipments. Notable among these are the cereal manufacturers in Canada and the United States, and the grapefruit canners of Florida.

Another erroneous viewpoint held, this time on this side of the Atlantic, is that fibre cannot be used safely for containers on account of the rough treatment that they get after they safely arrive at their European destination. Observers, recently returned from Europe, state positively that no conditions are as severe on the container in Europe as they are in the United States and Canada. There is no more material difference in shipping there than there is here, except that the hauls are not so long.

Manufacturers have long been shipping goods from the East Coast to the West Coast, and canned goods have been going in the opposite direction. There is little or no difference, in the opinion of experts, between intercoastal transportation and transatlantic shipping.

Here in the United States are long rail hauls. Generally speaking there are none in Europe. It is said



And Now—The World's First Anti-Friction Locomotive Timken Bearing Equipped

Another tough job for Timken Bearings—but Timkens are licking it just as they have licked Industry's toughest jobs in all types of machinery!

For the first time in the history of world railroading, a locomotive has been placed on a full anti-friction basis, and Timken is proud to have the privilege of pioneering this great forward step in the interests of American railroad advancement.

The Timken locomotive pictured above was designed and built for the sole purpose of demonstrating the advantages of roller bearings as applied to motive power.

It has been placed in service on a strictly non-revenue basis, and is being loaned without charge to railroad companies desiring to determine its operating characteristics under their own conditions.

Every wheel turns on Timken Tapered Roller Bearings—front truck wheels, driving wheels, trailer truck wheels and tender truck wheels.

There are 32 Timken bearings in the wheels and booster, and in addition Timkens are used in the speed driver of the valve pilot and in the train control governor.

Another revolutionary feature of this locomotive made possible by the higher rotative driving wheel speeds secured through the use of Timken Bearings, is the fact that it can handle fast freight and passenger trains with equal efficiency, having the necessary power and speed for both purposes.

All of the Timken benefits which users of Timken-equipped industrial machinery have enjoyed for years are reflected in the Timken locomotive, namely, friction elimination, lubrication economy, power conservation, radial, thrust and combined load capacity, extended machine life—modern anti-friction necessities that only Timken Bearings can provide. Don't you want these same enduring economies in every piece of equipment you operate? The Timken Roller Bearing Co., Canton, Ohio.

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that the average European rail haul is only about 200 miles, and at the most 500 miles, from the receiving port, because cargo is dropped as the ship proceeds on her course, at the sea port nearest the ultimate destination.

Another important factor in the increasing use of the fibre container as against wood, is that there is no difference in the fibre export case as compared to the domestic fibre case, for the reason that handling in the United States is more severe than in Europe. Fibre cases have now been standardized as to size, for canned goods and for dried fruit, in fact, for each different type of merchandise packed. These cases are made of jute and jute, or kraft and jute, or kraft and kraft.

Cartons for products in small unit containers is a much older development on the Pacific Coast than the fibre packing case. The carton package idea has been so firmly planted in the minds of American women that they would no longer accept handling of many foods in bulk, without the sanitary protection and convenience of modern containers. The more venturesome industries that pioneered this development spent millions in advertising and years in education, and the result has been a general acceptance of packaged food products.

Old Cracker Barrel Is Gone

Try to visualize the grocery store of today without small packages of breakfast food, macaroni, crackers, cheese, sugar, tea, coffee, pickles, or fruit. This has been the background for the tremendous development of packaging dried fruit.

Detailed figures are not available to show the exact quantity of dried fruit packed in cartons and small retail packages. Accurate estimates by leaders in the dried fruit industry of California, however, state that 30% of the raisin production is in cartons. For the 1928 production of 259,808 tons, this would represent 77,942 tons in retail packages.

Of the 220,366 tons of prunes packed in California last year, estimates indicate a production of approximately 44,054 tons in one and two pound cartons. If the average contents of dried fruit cartons were one pound, there would be, according to figures presented more than 244 million cartons packed last year.

Among the small packages of dried fruit the boxboard carton is the outstanding container. This is particularly true of prunes and raisins, the principal California dried fruits. The principal types of cartons may first be divided into two classes, the shell and wrap packages, and the printed carton. Printed cartons have three types of closure—sealed, hook and eye, and tuck in.

The Economy Package

For prune cartons of this type a special board, known as K-B, is used. It is an emulsified asphalt between two layers of boxboard. As prunes are packed direct from the processor, there is present a large amount of steam. This steam has a tendency to soften the first layer of boxboard but is checked by the asphalt, which protects the outer layer of board and holds the carton rigid. The moisture is later absorbed by the fruit as it cools and the prunes do not dry out as readily.

Raisins are packed by both machines that seal the cartons and by hand methods, using hook and eye packages. As raisins are packed in huge volume most of the packing is by automatic machinery.

For seeded raisins a parchment liner is used in every carton, as the juice from this fruit would injure the

appearance of the package and cause sticking. These liners are handled by the same machinery that forms and seals the cartons.

Paper bags, known as the "economy package" or "market day special" have been used to some extent for prunes and cut fruits. They are packed in two- and five-pound sizes, and find principal sales in the Middle West. This package represents the lowest possible cost for distribution in retail packages and has found favor with chain stores. Smaller prunes are generally used for this package.

Fancy packs for gift and holiday trade have been adopted by a number of Pacific Coast packers. Their market is limited but has shown substantial development. A complete variety of fruits, with which nuts and pineapple are often combined comprise the usual pack. They are boxed in attractive candy-type boxes. Some have moisture proof transparent wrappers.

Verily, paper has much to do with the marketing in dried form the produce of agriculture.

Kraft Paper Crisis

The kraft paper industry is now in the greatest crisis of its history. Healthy, progressive improvement or the dismal alternative of chaos are weighed by the actions of the manufacturers of this group, according to an appeal issued by O. M. Porter, manager of the National Kraft Paper Manufacturers' Association.

"It is a mere commonplace truth, applicable to the kraft paper industry as to every other competitive industry in this country, that in the present business emergency, whatever business does in fact exist ought, for the welfare of the industry and of the country itself, to be handled at reasonably profitable price.

"This can be done in the kraft industry if the sales prices of its commodities shall be governed by current market prices and not be subjected to uneconomic, short-sighted and selfish efforts at supposed advantage of obtaining business by any kind of method and at any kind of price. "The latter course leads to fundamental damage not only to each and every factor in the industry, but also to the communities in which its mills are located, to the labor which it employs, and, to a very appreciable extent, to the country itself," Mr. Porter states.

Mr. Porter places faith in the committee recently jointly appointed by the National and Southern Kraft groups. He urges every mill to investigate conditions thoroly before launching any action that would lead to a market scramble without thought of costs. He calls attention to the low stocks now held by merchants and urges that the upturn in business now in evidence can be turned to profit for the industry if fear is not allowed to rule.

Berkheimer Roofing Plans Expansion

No confirmation has as yet been received on a report to the effect that the J. E. Berkheimer Manufacturing Company is looking for a site in Portland with the purpose in mind of establishing another roofing factory in that center.

The Berkheimer company is now operating a small roofing and felt mill in Tacoma and is reported to have been doing quite well. The company is believed to be the only one on the Pacific Coast using essentially all rags in its product.

J. E. Berkheimer is president of the company.



NO PICK-UP



PATENTS PENDING

THE MODERN TOP ROLL

gives you a stone face that you can turn to advantage in any top position, for any grade and weight of paper, without pick-up or sticking. Stonite is a special composition of quartz, feldspar, and ebonite. It is as hard, as durable, as smooth, and as porous as granite. And as Stonite is applied to a metal body, a Stonite roll can be made in any desired weight. Or you can have Stonite applied to a present metal body. Stonite performance in many leading paper mills has already established its superiority. Therefore, you should know all about Stonite now, to keep abreast of the industry. Write to us or our nearest representative for full information.

STOWE & WOODWARD COMPANY

EXCLUSIVE MANUFACTURERS OF STONITE ROLLS

NEWTON UPPER FALLS, MASSACHUSETTS, U. S. A.

W. E. GREENE CORP., Room 4004, Woolworth Building, New York City; R. W. HOLDEN, 10 South LaSalle Street, Chicago, Ill.; H. G. SPERRY CO., 415 Call Building, San Francisco, Calif.; A. G. CENTER, 124 West Main Street, Chilton, Wis.

T - A - P - P - I

Pacific Coast Section

Chairman—C. W. MORDEN,
C. W. Morden Co., Portland, Oregon

Vice-Chairman—HARRY ANDREWS,
Powell River Co., Ltd., Powell River, B. C.

Secretary-Treasurer—MYRON W. BLACK,
Inland Empire Paper Co., Millwood, Wash.

A Message from the Incoming Chairman

By C. W. MORDEN

As incoming chairman of the Pacific Section of TAPPI I am pleased to accept the offer of this space in PACIFIC PULP AND PAPER INDUSTRY to urge the full cooperation of each individual member of the Pacific Section of TAPPI in the activities of the organization to the end of definitely and constructively advancing the cause of the industry.

The new committee program of TAPPI offers every member an opportunity to do real constructive work



C. W. MORDEN
Chairman
Pacific Section
TAPPI

Photo by Hamilton Studio, Seattle

for the industry in that particular line in which his interests lie and his qualifications best apply.

We of the Pacific Section of TAPPI were fortunate in having set up for us at the recent Portland meeting a very definite picture of this new program with particular reference to its Pacific Coast application. TAPPI'S president, Mr. Krimmel, gave us this picture. His remarks with reference to some of the special problems facing members of the Pacific Section of TAPPI certainly justify the thoughtful consideration of each one of us.

Meetings such as the Portland meeting, as I see it, offer the place and the means for most effectively coordinating and making available the work to be done on TAPPI'S new committee program. In the Pacific Section of TAPPI there is a real opportunity to develop from this new program a distinctive contribution to the industry affecting those phases which are especially identified with the industry as it exists in our section.

I urge you, therefore, members of the Pacific Section of TAPPI to attend these meetings, and most important, to participate to the fullest extent possible in the new committee program that TAPPI has inaugurated.

Recent New Members of TAPPI

Mr. Herman Gevers, superintendent, Longview Fibre Company, Longview, Wash.

Mr. K. B. Hall, Sales engineer, for Noble & Wood Mach. Co., of Hoosick Falls, N. Y. and Filtration Engineers, Inc., Newark, N. J., Portland, Ore.

Everett Getting Ready For Spring Meeting

Altho the final stamp of official approval was not put on the next meeting place of the Pacific Section of TAPPI, the winds of chance point very much at the lively little paper city of Everett, Washington. Consequently, the goodly number of TAPPI members in Everett are already beginning to hold some informal discussions which look forward to holding the "best yet" meeting of the Pacific Section when—and they won't take "if"—that body convenes in Everett along about next April.

There are many things in favor of a meeting at Everett. The city is one of the most important on the Pacific Coast from the standpoint of wood-using industries. It is an important log center. It has in addition to two fine mills in the pulp and paper category, a number of the largest sawmills, and other wood-using industries, such as veneer plants. In addition, the city has other auxiliary industries, such as the Sumner Iron Works, which are allied with both the lumber and the pulp and paper industries from the standpoint of supply equipment. Some 40 years ago the Rockefeller interests founded a paper mill at Lowell, just outside of Everett proper, and that institution has developed thru some earlier vicissitudes into the present well known Everett Pulp & Paper Company, manufacturing each day 75 tons of soda pulp book paper which scarcely needs introduction in Pacific Coast circles. In addition, Everett has a most excellent new 175-ton bleached sulphite mill in the Puget Sound Pulp & Timber Company.

It is seen that the background is there for a TAPPI meeting. Both pulp and paper institutions are represented in the TAPPI membership rosters, and, aside from these two, the Weyerhaeuser Timber Company, operating sawmills at Everett, can claim kinship now that the Weyerhaeusers are going seriously into pulp manufacture with the building of a new 150-ton sulphite pulp mill in conjunction with the company's extensive lumber operations at Longview, Washington.

As for location Everett is an easy point to reach for all on the Pacific Coast. Mainline railroads cut across the back yards of both pulp and paper mills. Everett is on the Pacific Highway and is but a short hour's drive from Seattle. It will be difficult to think up an excuse about not being handy to get there.

As for accommodations, Everett has good hotel facilities. In fact, some of the Everett men were reported recently to have been sizing up the dimensions of the banquet room in one hostelry in anticipation of a meeting and eating place. There will be no trouble on this score.

Among Everett members there are more than enough to man any committees on program, entertainment, accommodations and the so forth, and if chairman-elect C. W. Morden hasn't already drafted some of this local personnel for these details it is perhaps a safe bet that he's at least got it in mind.

GIVE YOURSELF
a useful Christmas present.

Subscribe to
PACIFIC PULP AND PAPER INDUSTRY

"IMPCO"

DECKER *or* THICKENER



Thickens sulphite pulp to 10%. Built in any size required. Extra heavy cylinder mould. Gear driven couch roll which increases capacity and eliminates wear on cylinder faces. Double water compartments with gate control.

Improved Paper Machinery Corporation

NASHUA, N. H., U. S. A.

***In Canada:* Sherbrooke Machineries, Limited**

SHERBROOKE, QUEBEC

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S · A · F · E · T · Y

FIRST — LAST — ALWAYS

The best safety device known is a careful man

Pacific Coast Division
Pulp and Paper Section

NATIONAL SAFETY COUNCIL

ROBERT H. SCANLON
Regional Director
Powell River Co., Ltd.
Powell River, B. C.

RESOLVED,

That we express our sincere appreciation to PACIFIC PULP and PAPER INDUSTRY of Seattle for the work that publication has done in stimulating an interest in SAFETY work in the pulp and paper industry of the Pacific Coast.

A Resolution adopted at the organization meeting of the PACIFIC COAST ASSOCIATION OF PULP AND PAPER MANUFACTURERS.

The Way For Cooperation Opens

Representatives of the pulp and paper manufacturing industry of the Pacific Coast states have organized a regional association to promote the general welfare of the industry in this region. It is significant that this association should have recognized SAFETY in its organization articles as one of those problems in which there is benefit thru cooperation.

SAFETY is one of those intangibles which you have to keep everlastingly alive if you are to get any good out of it. Nothing disintegrates quite so fast as a SAFETY movement which loses the management's sincerity and driving stimulation. Competition keeps the SAFETY movement very much alive. First competition within the mill then competition between mills in a locale, and finally competition between regions.

With the development of the new Pacific Coast Association of Pulp and Paper Manufacturers the cause of SAFETY should receive a considerable stimulus. As has been said before in this SAFETY page, the work is humanitarian first and as such should know no bound-

aries. The more widespread the SAFETY effort, the greater should be the benefit to the participating mill. To the non-participating mill eventually will fall the lot of drawing the poorer class of employees, a higher accident rate, and decreased profits.

It has been urged in this page that the driving force behind the SAFETY movement should come from the top down, that there should be a sincerity behind the work, that the active participation in the work on the part of management is not only desirable but necessary.

The reduction of accident experience to a common denominator in the matter of computing statistics would in itself be a step forward. It would be the first step in putting the Coast mills on a competitive SAFETY basis, a move which was suggested as desirable at the manufacturers' organization meeting.

PACIFIC PULP & PAPER INDUSTRY, at the first SAFETY meeting to which a Coast-wide invitation was extended, held at Powell River, February 12, 1930, offered to donate a suitable symbol for annual presentation to the mill establishing the highest SAFETY record in Coast wide competition when and if such competition is established. Inasmuch as the presentation of a SAFETY contest prize came up again at the recent manufacturers' organization meeting referred to, it is desired to remind that PACIFIC PULP & PAPER INDUSTRY'S offer still holds good.

Unusual Accident

F. V. Sams, Seattle representative of Allis-Chambers Manufacturing Company, sustained a broken vertebrae in an unusual accident at the Port Angeles plant of Fibreboard Products, Inc., on October 29 when the roof of a pulp tank on which he was standing collapsed.

The tank was filled with stock to a depth of about four feet at the time. Robert Bundy, assistant manager of the Fibreboard mill, and Max Graham of the Washington Pulp & Paper Corporation, were precipitated with Mr. Sams into the pulp, but received only minor injuries.

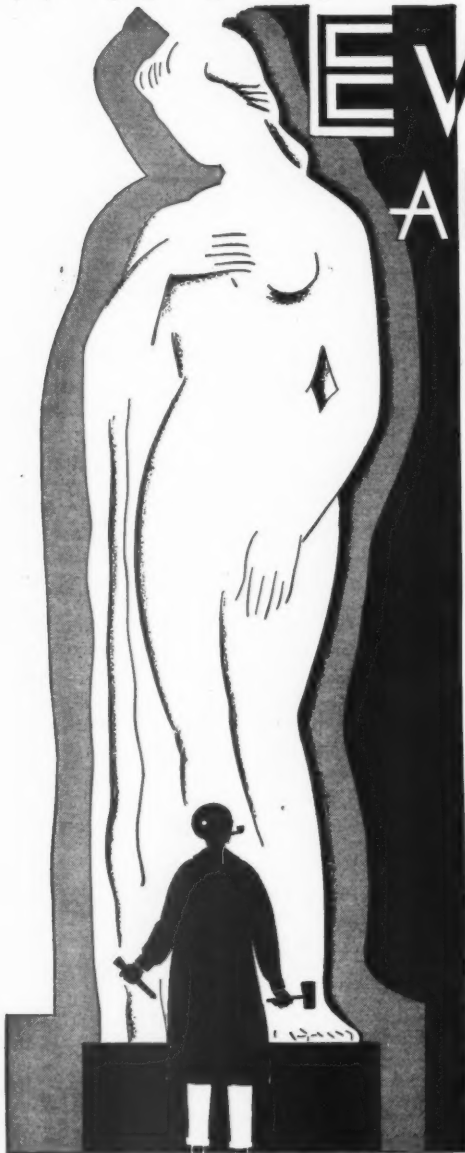
STATEMENT OF ACCIDENT EXPERIENCE—SEPTEMBER, 1930

Mills in State of Washington

COMPANY—	Hours Worked	Total Accidents	Frequency Rate	Days Lost	Severity Rate	Standing
Grays Harbor Pulp & Paper Co.	67,240	0	0	0	0	1
Inland Empire Paper Co.	61,142	0	0	0	0	2
Fibreboard Products Inc., Port Angeles	35,680	0	0	0	0	3
Fibreboard Products Inc., Sumner	20,313	0	0	0	0	4
Shaffer Box Co.	10,104	0	0	0	0	5
St. Regis Kraft Co.	61,953	1	16.1	22	.355	6
Crown Willamette Paper Co., Camas	322,365	6	18.6	255	.791	7
Rainier Pulp & Paper Co.	51,710	1	19.3	1	.019	8
Washington Pulp & Paper Corp.	78,090	2	25.6	13	.166	9
Puget Sound Pulp & Timber Co., Everett Division	67,872	3	44.2	22	.324	10
Puget Sound Pulp & Timber Co., Anacortes Division	25,802	2	77.5	56	2.170	11
Longview Fibre Co.	99,176	8	80.7	109	1.099	12
Everett Pulp & Paper Co.	81,288	7	86.1	87	1.070	13
Columbia River Paper Co.	52,606	6	114.1	52	.988	14
Pacific Straw Paper & Board Co.	16,512	2	121.1	1209	73.220	15
National Paper Products Co.	86,535	12	138.7	120	1.387	16
Puget Sound Pulp & Timber Co., Bellingham Division	28,800	8	277.8	216	7.500	17

The following mills not reporting: Cascade Paper Co.—Not in operation. Tumwater Paper Mills.—Not in operation. Pacific Coast Paper Mills

WHY PRINTERS LIKE EVERETT ART BOOK



The true art in commercial paper making lies not only in establishing a high standard but in maintaining it.

Printers who take a personal pride in their work like this English Finish paper because it has that outstanding Everett quality of Uniformity—so essential to the perfect job.

From first impression to last, Everett Art Book gives the printer's skill its generous due.

EVERETT ART BOOK



EVERETT PULP & PAPER CO.

Home Office and Mills: Everett, Washington

Sales Offices: 244 California St., San Francisco . . . 802 Washington Bldg., Los Angeles

Everett papers may be obtained from the following paper merchants:

SAN FRANCISCO
Blake, Moffitt & Towne
Zellerbach Paper Company
LOS ANGELES
Blake, Moffitt & Towne
General Paper Company
Sierra Paper Company
Zellerbach Paper Company
OAKLAND
Blake, Moffitt & Towne
Union Paper Company
Zellerbach Paper Company
SACRAMENTO
Blake, Moffitt & Towne
Zellerbach Paper Company
STOCKTON
Zellerbach Paper Company

FRESNO
Blake, Moffitt & Towne
Zellerbach Paper Company
EUREKA
Humboldt Paper Company
SAN JOSE
Blake, Moffitt & Towne
Zellerbach Paper Company
of San Jose
LONG BEACH
Blake, Moffitt & Towne
Zellerbach Paper Company
SAN DIEGO
Blake, Moffitt & Towne
Zellerbach Paper Company

PHOENIX
Blake, Moffitt & Towne
Zellerbach Paper Company
TUCSON
Blake, Moffitt & Towne
PORTLAND
Blake, Moffitt & Towne
Zellerbach Paper Company
EUGENE
Zellerbach Paper Company
SALEM
Rodgers Paper Company
MEDFORD
Blake, Moffitt & Towne

SEATTLE
Blake, Moffitt & Towne
Zellerbach Paper Company
TACOMA
Standard Paper Company
Tacoma Paper and Stationery
Company
SPOKANE
B. G. Ewing Paper Company
John W. Graham & Company
Spokane Paper & Stationery
Company
Zellerbach Paper Company
YAKIMA
Blake, Moffitt & Towne
BOISE
Blake, Moffitt & Towne

BILLINGS
Carpenter Paper Company of
Montana
DENVER
The Carter, Rice & Carpenter
Paper Company
SALT LAKE CITY
Zellerbach Paper Company
AUCKLAND, N. Z.
Brown & Stewart, Ltd.
HONOLULU, T. H.
Honolulu Paper Co., Ltd.
Patten Company, Ltd.
MANILA, P. I.
J. P. Heilbronn Company

T-R-A-D-E - T-A-L-K

Devoted to the Paper Trade of the Western States

The Columbia Paper Company, one of the leading British Columbia distributors, featured the products of Pacific Mills Ltd., at a recent exhibition held in Vancouver.



Kimberly Stuart To Visit Coast

Blake, Moffitt & Towne jobbing houses were looking forward to a visit in mid-November from Kimberly Stuart, second vice-president and secretary of the Neenah Paper Company, Neenah, Wisconsin, to post them on the latest in the Neenah Line, which is handled by B. M. & T. Mr. Stuart comes from two old families of paper makers.

Following his graduation from college Mr. Stuart spent a couple years with specialty mills and in general built up a diversified experience that at present stands him as excellently qualified in the specialty lines.

Mr. Stuart will work with the Blake, Moffitt & Towne houses and point the sales staffs in the best applications of the Neenah papers.

Paper Folks on Advertising Committee

Nancy Baker Tompkins, Zellerbach Paper Company, Los Angeles, has been named chairman of the exhibits committee of the Advertising Club of Southern California. The exhibits committee is composed of the following: Roy Strong, vice-chairman, Blake Moffitt & Towne; D. A. Stock, Sierra Company; Kenneth Holland, Carpenter Paper Company; Henry L. Stewart, Fred French Paper Company; and Alfred H. Siebke, Geo. H. Morill Company.

Among the other committees are the educational committee, the publicity committee, research committee, speaker's committee and trade practices committee. The object of those groups is the establishment of a better place for direct advertising in the mind of the public.

The exhibits committee will endeavor to get together whatever effective exhibits of direct mail that are available, and to organize additional exhibits, so as to keep as constantly as possible attractive specimens in some organized form before the various users.

Some of the exhibits that are to be used are the 50 best pieces of the year that are selected by the Direct Mail Advertising Association at their annual convention, occasional exhibits sent out by paper manufacturers, as well as exhibits that can be organized from among the

producers in Southern California as well as from the larger direct mail advertisers themselves in that territory. The exhibits will be on regular exhibition at the paper houses. The exhibit committee is said to be unique, in that it is the only committee, as far as is known, formed solely for the avowed purpose of propaganda, and its work should result in greater paper sales, according to the various members.

Price Structure Is Woefully Weak

Prices on some grades of book paper tumbled \$5 a ton during the last month. The action is but one concrete example taken from a price structure which totters in its entirety like an invalid. There is a great feeling of uncertainty among the distributors and most of them believe the end is not yet.

Some jobbers even go further and maintain that further downward revisions on paper prices must come. They point out that on some grades an artificially wide spread is being maintained in spite of a general decline in commodity prices. The situation is one, they point out, that is fictitious and economically unsound and, as such, can not endure.

The hope of the mills, apparently, is that they can maintain prices during the present downward swing if they sit tight, and that, when and if prices move up again, they will have saved themselves all the hard work of getting the markup back to the old stand. The procedure is all right if the time element is not too great, that is, if the upward swing comes before the grip is lost.

There is a noticeable increase in pressure, however, of trade upon jobbers, and jobbers upon mills, for a scaling down. They point out that, while the basic commodities show extensive declines, in many cases Mr. Average Consumer is still complaining that he is unable to see where these declines have reached his pocket-book. And he wants to know why.

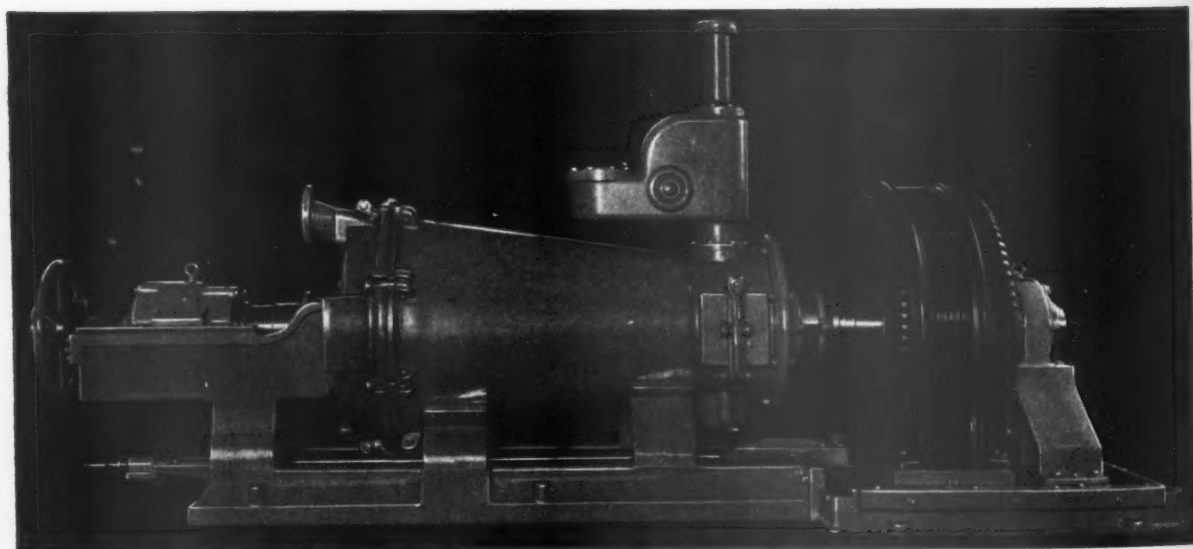
O. W. Mielke of Blake, Moffitt & Towne, Portland, visited the Seattle branch recently.

THE CLOSE-COUPLED JORDAN HAS DEFINITE ADVANTAGES



■ THE APPLETON CLOSE-COUPLED JORDAN ENGINE

Mounting the motor direct on the shaft has given the Appleton Close-Coupled Jordan definite advantages that are unique with this modern Jordan. It has reduced the over-all length twenty-five per cent, making this Jordan more adaptable to install and allowing four or five extra feet in which to pull the plug. It has provided a more efficient and a more profitable power application, at the same time effecting an important reduction in installation costs. The elimination of the flexible coupling has removed a source of trouble and reduced efficiency. Full advantage has been taken of the precision of anti-friction bearings to promote uniform stock refinement, accurately controlled, and for steady operation requiring little attention. These are important factors that contribute directly to the superior operating performance of the Appleton Close-Coupled Jordan.



THE APPLETON MACHINE COMPANY ■ APPLETON, WISCONSIN

Pacific Coast Representative

PAPER MILL EQUIPMENT COMPANY

Northwestern Bank Building, Portland, Oregon

When writing APPLETON MACHINE CO. please mention PACIFIC PULP AND PAPER INDUSTRY

LOW
EX:

PRECISION ALL ALONG THE LINE

backed by years
of specialized
experience



If this Company were asked to name the greatest single factor of late years in the evolution of paper making machinery from its earlier crude stage up to the far higher standards of today, the answer would be "precision in manufacture."

To the Black-Clawson way of thinking, "precision" as reflected in the more general use of jigs in manufacture, the adoption of roller bearings wherever possible, insistence upon rolls being in balance while turning as well as while standing still, are among the great achievements.

That the Black-Clawson Company pioneered many of the major developments of recent years—always has been a sticker for precision—is too well known to require comment.

Your inquiry on drives, dryers—whatever you may require—will imply no obligation.

THE BLACK- CLAWSON COMPANY HAMILTON, OHIO

OWNERS OF SHARTLE BROS. MACHINE CO. MIDDLETOWN, O.
EXPORT OFFICE—15 PARK ROW, NEW YORK CITY

"THE PROOF OF THE PUDDING"—



When in the market for a jordan you quite naturally want the jordan that comes closest to doing exactly what you want a jordan to do.

That being the case, and it always is the case, which is the most logical thing to do—

Go to a jordan builder who makes just one kind of jordan and trust to luck to adapt the jordan you buy to the requirement—

Or, come to Shartles where you have both long taper and quick taper jordans to choose from—also each in several sizes?

Remember that we build not only good jordans but that we build a line of jordans and are the only manufacturers doing so.

A list of mills using Miamis will be sent upon request.

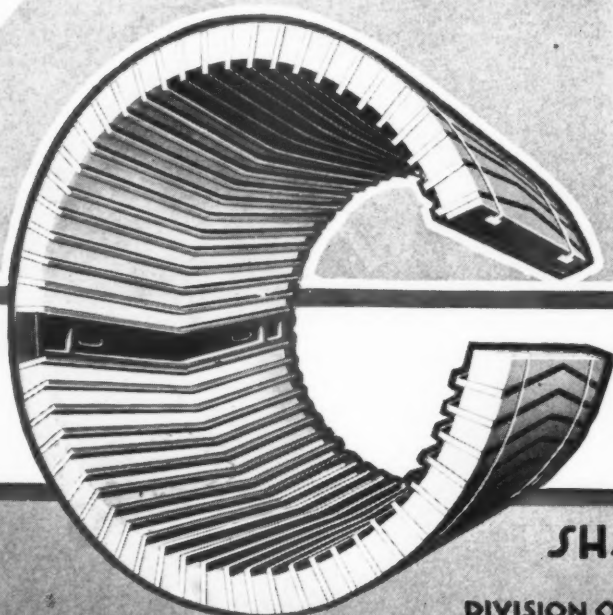
lies in the eating thereof—and hundreds of mills have eaten.

It is easier to "shove in" a Bulldog filling than to "build in" other kinds.

If you use bronze and have specks in your sheet, remember that there is no steel used in a Bulldog filling—no chance for specks to appear in the sheet.

Then, too, they are adjustable to the variations in size of different jordan shells.

Glad to be of service on fillings—always willing to let comparative performance decide the issue between a Bulldog and any other kind.



BULLDOG FILLINGS

THE PIONEER ASSEMBLED FILLINGS AND
STILL THE BEST ON THE MARKET

SHARTLE BROTHERS MACHINE CO.
MIDDLETOWN, OHIO

DIVISION OF THE BLACK-CLAWSON CO. HAMILTON, OH
EXPORT OFFICE 15 PARK ROW NEW YORK CITY

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The Paper and Pulp Industry In September 1930

According to identical mill reports to the Statistical Department of the American Paper and Pulp Association from members and cooperating organizations, the DAILY AVERAGE paper production in September showed a 3% increase over August 1930, and a decrease of 15% under September 1929. The DAILY AVERAGE wood pulp production in September registered practically no change from August 1930, and a decrease of 13% under September 1929.

The September production of newsprint uncoated book, paperboard, wrapping bag, writing, tissue and hanging registered a decrease under September 1929 out put. The production of all major grades of paper during the 9 month period ending September 1930 registered decreases under the totals for the same period of 1929. Shipments of all major grades also decreased during the 9 month period of 1930 as compared with the same period of 1929.

All grades, excepting wrapping, hanging and building papers, showed increase in inventory at the end of September 1930 as compared with the end of August 1930. As compared with September 1929, increases in inventory were registered in the following grades: newsprint, uncoated book, writing and tissue papers.

Identical pulp mill reports for the 9 month period ending September, 1930, indicated that 6% more mitscherlich sulphite pulp and 1% more kraft pulp was consumed by reporting mills than for the same period of 1929. The total shipments of all grades of pulp to the open market during the first 9 months of 1930 were approximately 10% below the total for the same period of 1929.

All grades of pulp, excepting bleached sulphite, easy bleaching sulphite, kraft and soda pulps, registered decreases in inventory at the end of September, 1930, as against the end of August, 1930. As compared with September, 1929, soda pulp was the only grade whose inventory registered a decrease.

REPORT OF PAPER OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF SEPTEMBER, 1930

GRADE—	Production Tons	Shipments Tons	Socks on Hand End of Month— Tons
Newsprint	95,261	96,048	30,879
Book (Uncoated)	67,708	65,210	64,364
Paperboard	180,152	180,108	59,091
Wrapping	42,581	44,415	41,457
Bag	12,070	11,828	5,017
Writing, etc.	25,286	23,996	53,709
Tissue	11,916	11,821	12,897
Hanging	4,531	5,132	5,672
Building	6,955	7,141	2,839
Other Grades	19,748	19,788	15,456
Total—All Grades	466,208	465,487	291,381

REPORT OF WOOD PULP OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF SEPTEMBER, 1930

GRADE—	Production Tons	Used During Month—Tons	Shipped During Month—Tons	Socks on Hand End of Month— Tons
Groundwood	64,044	68,969	2,303	69,413
Sulphite News Grade	30,507	29,165	1,429	7,308
Sulphite Bleached	24,648	22,905	1,437	4,604
Sulphite Easy Bleaching	2,772	2,471	256	1,076
Sulphite Mitscherlich	6,672	5,918	824	1,795
Kraft Pulp	29,283	25,223	3,692	7,113
Soda Pulp	19,476	12,732	6,693	3,330
Pulp—Other Grades	64	75	8
Total—All Grades	173,466	167,383	16,709	94,647

International Paper Passes Dividend

For the third quarter this year International Paper and Power Company reports net income available for dividends on its preferred stock of \$974,873.91.

In his comments to shareholders, Archibald R. Graustein, President of the Company, says:

"The expected growth in earnings from the Company's Canadian power properties and from the increasing efficiency of its paper mills is being realized, but to date its effect has been offset by the lower volume of sales and the lower prices prevailing in the pulp and paper business. In view of these facts the Directors decided that under current business conditions the omission of the common dividend was conservative and in the best interests of all stockholders."

Net revenue for the quarter was \$9,725,208, or slightly less than the \$9,919,714 for the same quarter in 1929. The net income for the first three quarters was \$30,472,698, substantially much better than the \$23,814,268 for the same period a year ago.

The balance available for dividends in the third quarter of 1930 was \$3,145,847 as compared with \$2,891,722 in 1929. Dividends on stocks of subsidiaries was considerably higher in the third quarter of 1930 than in 1929, the amounts being respectively, \$2,170,973 and \$1,869,119. For the three quarters this item also shows a great diversity, being \$6,344,305 for 1930 as compared with \$3,818,620 in 1929.

Total dividends paid for the first three quarters of 1930 are \$6,071,594 as compared with \$6,618,126 in 1929.

Brisbois Looks Over Northern Mills

N. M. Brisbois, who directs operations for the several board and container plants of Fibreboard Products Company, was North from his California headquarters for a few days early October. He spent a day or two each at the Fibreboard plants at Sumner and Port Angeles, Washington, and at the 200-ton kraft mill of the National Paper Products Company at Port Townsend, Washington. A new beater is being installed at Sumner and at the Port Angeles plant a program of general betterment is about to be undertaken.

Jack Hanny on Southern Visit

The cares of the big specialty mill of the Crown Willamette Paper Company at Camas, Washington, were left behind for the time in October while Jack Hanny, mill manager, went to California for a trip. Mr. Hanny was recently transferred to Camas from the company's news print mill at West Linn, Oregon, where he held the mill managership.

Norman Gibbs on Eastern Trip

After seeing thru the completion of the new 175-ton bleached sulphite pulp mill of the Olympic Forest Products Company at Port Angeles, Washington, Norman Gibbs, resident manager, has gone to New York and other Eastern points for a time. Mr. Gibbs is also resident manager of the 300-ton news mill of the Washington Pulp & Paper Corporation, Port Angeles.

Lumbermen's Atlas of British Columbia

A valuable addition to the works of reference dealing with the lumber industry of British Columbia is the "Lumbermen's Atlas of British Columbia", issued by the publishers of the "British Columbia Lumberman", 909 Metropolitan building, Vancouver, B. C.



Cross Section of Western Hemlock Log Showing Class of
Timber on Our Own Lands from which We Manufacture

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The Foreign Market

France as a Buyer of Wood Pulp

French imports of wood pulp come largely from Sweden, Norway and Finland. Smaller quantities are also received from Germany, Austria, Estonia, Czechoslovakia, and Switzerland. Imports in 1929 totaled 455,597 tons, less than the record importation of 495,609 tons in 1928, but considerably more than the 368,768 tons received in 1927.

Last years' receipts consisted of 159,782 tons of mechanical pulp, 280,191 tons of dry chemical pulp and 15,623 tons of wet chemical pulp. Deducting some minor exports there remained a net total of imports for the French paper industry of 440,730 tons, which was more than half of the total tonnage of paper produced.

In the past couple years there has been a small experimental traffic in wood pulp from the new Pacific Coast mills of America to France. With the strengthening of direct shipping facilities from the North Pacific Coast of America to France the possibilities for greater traffic in this direction are opened.—Statistics from the Bureau of Foreign and Domestic Commerce, U. S. Department of Commerce.

Depression in Swedish Pulp and Paper Industries

Pulp sales continue rather slow. Some sulphate mills have been on reduced production during the summer, and several have been completely shut down for a period. Stability is lacking, both in prices and production. Mechanical groundwood shipments are considerably above, but chemical pulp shipments are below last year. The paper market continues dull, with no improvement expected in the immediate future. Exports are below last year, although they have been well maintained considering that sixteen of the Swedish mills were idle for a period of two and one-half months because of a strike. Quite a substantial increase is to be noted in the exports of the better grades of printing, writing and tissue papers.—Commercial Attache Lund, Oslo.

Finnish Exports Maintained by Profit Sacrifice

Some new business is being done in various grades of pulp, but prices are so unsatisfactory that the mills are considering shut-downs rather than sell their production at a loss. Total exports of pulp and paper have been above last year, Finland having been one of the few countries which has been able to maintain its paper and pulp exports in spite of the decreased demand in most of the importing countries, but this has undoubtedly been done at the expense of profitable prices.—Commercial Attache Marquard H. Lund, Oslo.

Brazilian Paper Mills Curtail Production

Assistant Commercial Attache Pierrot, Rio de Janeiro, cables that an organization representing practically all of the important paper mills in Brazil has voted to curtail production for the present to 66% of the rated capacity. The general price level for paper is little changed. Imported papers have recently advanced owing to the recent weakness in exchange.

New Mill to Be Constructed in Finland

A newly organized company, Lahden Cellulose O. Y., has applied for incorporation, according to a recent report from Acting Commercial Attache C. Roderick Matheson, Helsingfors. Original capital stock of \$250,000 is to be increased as desired up to \$750,000. Erection of the mills will not be commenced until conditions in the chemical pulp market are more favorable. It is planned to utilize to a great extent saw mill waste as a raw material in the manufacture of chemical pulp and industrial by-products.

Pacific Coast Pulp to Europe

When a British freighter lifted 1000 tons of sulphite pulp from the new mill of the Puget Sound Pulp & Timber Company at Everett, Washington, in early October for shipment to Wales, it is believed that a record was established for movement of Pacific Coast pulp to Europe. The shipment is evidence of the growing importance of the Pacific Northwest region of America as a factor in world pulp supply. The Puget Sound Company has moved pulp cargoes in the past months to many export markets.

Pulp-Paper is Canada's Leading Payroll

Gross value of production of the pulp and paper industry in Canada last year amounted to \$243,970,761, an increase of 4.7% over the figures for 1928, according to figures issued by the Dominion government.

The pulp and paper industry has headed the lists in wage and salary distribution in Canada since 1922 when it replaced the sawmills in this respect and it has been first in gross value of products since 1925, when it replaced the leadership of flour-milling.

The gross values of the manufactured products of the industry for the last five years are as follows:

1925	\$193,092,937
1926	215,370,274
1927	219,329,753
1928	233,077,236
1929	243,970,761

This gross value, according to R. H. Coats, Dominion statistician and R. G. Lewis, forest products statistician, represents the sum of the values of pulp made for sale in Canada and paper manufactured. It does not include pulpwood nor the pulp made in combined pulp and paper mills for their own use in making paper.

Net value of production in 1929 was \$147,096,012.

Canada now has 108 pulp and paper mills representative of an investment of \$644,773,806. There are 33,584 employees drawing wages and salaries aggregating \$50,214,445.

Australian Business on Wane

Outlook for increased trade in pulp and newsprint with Australia is anything but bright, according to officials of Powell River Company and Pacific Mills, Ltd., chief Pacific coast exporters to that market. A 30% reduction in Australia's demand for newsprint is anticipated for the coming year. Several newspapers in Australia and New Zealand have been forced to increase their subscription price as a result of the new tariff on newsprint and other rising costs, and others have suspended publication.

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PAPER

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*New Types**New Models**New Machines*

EQUIPMENT

Manufacturers of, and dealers in, equipment used by pulp and paper mills, board manufacturers, converting plants, paper merchants, or any other branch of the industry may make their announcements in this department.

*New Dealers**New Branches**Appointments*

New \$4,000,000 General Water Treatment Corp.

Organization of General Water Treatment Corporation under Delaware laws as a holding company to merge the interests of The Permutit Company, New York, and the Ward-Love Pump Corporation, Chicago, both specialists in equipment for the softening and purification of water, as well as in allied chemical and mechanical lines, is announced in a letter to stockholders of The Permutit Company. The companies in the merger have combined assets of more than \$4,000,000. The Permutit Company was the pioneer in the zeolite water softening industry in this country. It is the owner of basic patents covering the apparatus and the zeolites. The Ward-Love Pump Corporation enjoys unusual facilities for the distribution of its products through the Crane Company, manufacturers and distributors of plumbing supplies with over one hundred branches in the United States.

Installations of water-softening apparatus in the United States are proceeding at the rate of 25,000 units yearly. Mergers in the industry have been frequent. The Permutit Company in recent years having acquired water-softening interests from the Kennecott Company, Borromite Company, Wayne Tank & Pump Co., and Paige & Jones Chemical Company.

A New Emphasis on Costs

"A Chinaman's time in old China is worth very little. Common labor is both cheap and plentiful." And so, tho China contributed the fundamental principles of paper making to the world several centuries before Christ, the yellow nation has made no further progress in the art and is still carrying out its manufacture in the same crude hand methods it has employed for ages.

In America, where labor and power costs are high, industry must be attuned to the efficient. In an attractive and interesting folder now being distributed by the Mine & Smelter Supply Company, Denver, Colorado, the company's Marcy Rod Mill is featured as a unit in the modern mill which wants to reduce power costs, secure absolute control of its beating operation, improve its product, and make a good investment.

The company is offering its instructive catalog, "Beating and Refining with the Marcy Open End Rod Mill."

General Chemical Co. Maintains Seattle Office

The General Chemical Company, producers and marketers of aluminum sulphate, anhydrous bisulphite soda, sulphurous acid, sodium fluoride and other chemicals maintain an office at 2207 First Avenue South, Seattle to better serve the pulp and paper industry in the Pacific Northwest.

Mr. W. H. Jamieson is in charge and is thoroly familiar with the application of General Chemical's products to the manufacture of pulp and paper. A complete stock of chemically pure acids for pulp and paper mill laboratory purpose are warehoused at the Seattle office for quick shipment to the mills.

Allan Dunham to Represent E. D. Jones

E. D. Jones & Sons, Pittsfield, Massachusetts, have appointed Allan Dunham, 395 West Park Street, Portland, Oregon, to represent their line of equipment in the Pacific Coast territory. Mr. Dunham has been associated with the pulp and paper industry for a number of years and for the past two years or more has been covering the Pacific Coast mills for the Lockport Felt Company and the William Cabbie Wire Company.

E. D. Jones & Sons need no introduction to the world of pulp and paper. For 75 years they have been erecting a world-wide reputation as builders of high grade machinery for paper mills. Their purpose in appointing Mr. Dunham to represent them on the Pacific Coast is to afford the growing industry in this region a more direct service.

New Brown Indicating Pyrometer Controller

The Brown Instrument Company's new Model 801 indicating pyrometer controller can be supplied as an automatic control pyrometer, resistance thermometer, tachometer, or CO₂ meter. It has a number of outstanding advantages.

The control mechanism of Model 801 indicating pyrometer controller combines the basic principle of the Brown automatic control recorder with the new feature of mercury contacts for breaking high currents.

New Promal Chain Book Issued by Link-Belt

Link-Belt Company, 200 South Belmont Ave., Indianapolis, Indiana, will send gratis, upon request, its 32-page comprehensive data book No. 1050 devoted to PROMAL Chains. PROMAL is Link-Belt's new, stronger longer wearing metal for cast chains, for power transmission and conveying services. Dimensions, strength, list prices and weights, are given.

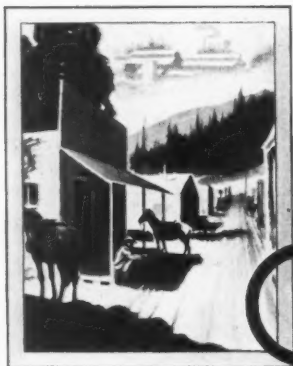
New Leahy Screen Bulletin No. 12-E

The Deister Concentrator Company of Fort Wayne, Indiana, manufacturers of chip screens used in many Pacific Coast pulp mill installations, has issued a new bulletin, No. 12-E, on the Leahy NO-Blind Vibrating Screen. This bulletin, throughout its unusual, attractive and completely informative pages, represents a finished job and an able presentation of the kind of information—both theory and practice—that especially interests the operating man.

Considerable attention is given to the theory underlying principles of the screening art. In addition to this the pictures throughout the bulletin aptly show methods of installation, some of which are out of the ordinary and therefore of unusual value to the plant engineers, superintendents and mechanical department.

The bulletin is more or less of a textbook peculiar to commercial screening practice.

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ONE WAY STREET

A CHALLENGING VISION FACED THE FIRST BUILDERS OF PACIFIC PULP AND PAPER MILLS. NO TRAIL MARKED THE WAY; ONCE STARTED THERE WAS NO TURNING BACK. THEY TRAVELED A ONE-WAY STREET . . . CAME THROUGH . . . AND CLEARED THE WAY FOR A GREAT AND GROWING INDUSTRY. WHERE THEY PIONEERED, NOW OTHERS FOLLOW.

FOR THOSE PIONEER PULP AND PAPER MILLS ON THE COAST, THERE WAS BUT ONE SOURCE OF CHLORINE — GREAT WESTERN ELECTRO-CHEMICAL COMPANY. TO HAVE THE SUPPLY ABSOLUTELY CERTAIN WAS VITAL — AND IT NEVER FAILED. THE SAME SURE SUPPLY, THE SAME UNIFORM QUALITY, STILL CHARACTERIZE BEAR BRAND CHLORINE, SUPPLIED TO THE INDUSTRY BY GREAT WESTERN.



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Canadian Exports of Pulp and Paper September, 1930

Pulp and paper exports from Canada in September were valued at \$14,579,745, according to a report issued by the Canadian Pulp and Paper Association. This was an increase of \$1,879,408 over the previous month's total and a decrease of \$1,004,784 below the total for September, 1929.

Wood-pulp exports for the month were valued at \$3,275,697 and exports of paper at \$11,304,048 as against \$2,539,680 and \$10,160,657 in the month of August.

For the various grades of pulp and paper details are as follows:

	September, 1930		September, 1929	
PULP—	Tons	Dollars	Tons	Dollars
Mechanical	22,544	636,667	23,944	675,370
Sulphite Bleached	20,577	1,438,766	18,637	1,397,913
Sulphite Unbleached	13,980	687,713	16,369	794,207
Sulphate	6,578	422,047	9,476	538,965
Screenings	1,745	30,940	3,263	61,950
All Other	737	59,564		
	66,161	3,275,697	71,709	3,468,405
PAPER—	Tons	Dollars	Tons	Dollars
Newsprint	194,820	10,909,298	201,249	11,689,638
Wrapping	1,170	129,160	919	103,450
Book (cwt.)	2,963	26,395	5,651	51,184
Writing (cwt.)	86	531	44	701
All Other		238,664		271,151
		11,304,048		12,116,124

For the first nine months of the year the exports of pulp and paper were valued at \$133,696,935. In the corresponding months of 1929 the value was \$145,618,067, so that there has been a decline this year of \$11,921,132.

Wood-pulp exports for the nine months amounted to \$30,127,354, and exports of paper to \$103,569,581 as compared with \$32,338,249 and \$113,279,818 respectively in the corresponding months of 1929.

Details for the various grades are given below:

	Nine Months, 1930		Nine Months, 1929	
PULP—	Tons	Dollars	Tons	Dollars
Mechanical	146,752	4,247,969	152,382	4,200,488
Sulphite Bleached	191,101	13,993,036	192,438	14,581,008
Sulphite Unbleached	146,354	7,286,538	143,221	7,070,560
Sulphate	67,949	3,988,124	101,729	5,998,522
All Other	21,573	611,687	17,700	487,671
	573,729	30,127,354	607,470	32,338,249
PAPER—	Tons	Dollars	Tons	Dollars
Newsprint	1,731,591	99,619,898	1,828,880	108,763,941
Wrapping	10,531	1,106,109	11,121	1,208,620
Book (cwt.)	29,535	277,496	55,975	478,351
Writing (cwt.)	2,101	17,957	3,850	35,010
All Other		2,548,121		2,793,896
		103,569,581		113,279,818

Pulpwood exports have been larger this year, the shipments for the first nine months amounting to 1,107,159 cords valued at \$11,221,892 as compared with 1,081,701 cords valued at \$11,009,255 in the nine months of 1929.

The Paper and Pulp Industry in August, 1930

According to identical mill reports to the Statistical Department of the American Paper and Pulp Association from members and cooperating organizations, the daily average paper production in August showed practically no change over July, 1930, and a decrease of 15% under August, 1929. The daily average wood pulp production in August registered practically no change over July, 1930, and a decrease of 10% under August, 1929.

The August production of news print, uncoated book, paperboard, wrapping, bag, writing, hanging and building papers registered a decrease under August, 1929, output. The production of all major grades of paper during the eight month period ending August, 1930, registered decreases under the totals for the same period of 1929. Shipments of all major grades, excepting hanging paper, also registered decreases during the eight month period of 1930 as compared with the same period of 1929.

Inventory increases over the July level were registered by the following grades: News print, paperboard, wrapping, writing and hanging. As compared with August, 1929, increases in inventory were reported in the following grades: News print, book, writing, tissue and hanging.

Identical pulp mill reports for the eight month period ending August, 1930, indicated that 7% more mitscherlich sulphite pulp and 1% more kraft pulp was consumed by reporting mills than for the same period of 1929. The total shipments to outside markets of all grades of pulp during the first eight months of 1930 were approximately 7% below the total for the same period of 1929.

All grades of pulp, excepting bleached sulphite and mitscherlich sulphite, registered a decrease in inventory at the end of August as compared with the end of July, 1930. As compared with August, 1929, groundwood and soda pulps were the only grades whose inventories registered decreases. The tonnage increase in the other grades, however, was not large.

REPORT OF PAPER OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF AUGUST, 1930

GRADE	Production Tons	Shipments Tons	Socks on Hand End of Month— Tons
Newsprint	101,601	99,236	30,691
Book (Uncoated)	68,008	68,862	61,985
Paperboard	177,554	176,529	59,047
Wrapping	44,161	42,565	43,291
Bag	12,072	12,310	4,775
Writing, etc.	25,293	24,658	52,419
Tissue	14,273	14,329	12,802
Hanging	4,002	3,591	6,273
Building	4,944	5,669	3,025
Other Grades	17,788	18,529	15,496
Total—All Grades	469,696	466,278	289,804

REPORT OF WOOD PULP OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF AUGUST, 1930

GRADE	Production Tons	Used During Month—Tons	Shipped During Month—Tons	Socks on Hand End of Month— Tons
Groundwood	63,632	72,956	3,020	80,641
Sulphite News Grade	31,869	28,063	4,018	7,585
Sulphite Bleached	23,771	20,013	3,564	4,369
Sulphite Easy Bleaching	2,736	2,429	332	1,063
Sulphite Mitscherlich	6,979	6,012	667	1,865
Kraft Pulp	30,666	22,732	8,403	6,745
Soda Pulp	19,423	12,430	7,154	3,279
Pulp—Other Grades	94		87	19
Total—All Grades	179,170	164,635	27,245	105,566

German Output of Chemical Pulp Growing

Chemical pulp production in Germany has steadily increased from the low figure of 269,000 metric tons in 1919 to 1,197,000 tons in 1929, the latter figure far surpassing pre-war production by 358,000 tons. Of the 1929 output, 1,097,259 tons represented sulphite pulp, 58,620 tons straw pulp, and 41,275 tons sulphate pulp. As the sulphite process of manufacture was inaugurated in Germany in 1871, in 1931 Germany celebrates the 60th anniversary of its cellulose industry. About 45% of the country's chemical pulp is produced in plants that consume it directly for paper making.—Trade Commissioner William T. Daugherty, Berlin.

6

Important Orders Recently Received

(comprising)

- 9 Kraft Deckers
- 2 Groundwood Deckers
- 3 Broke Deckers
- 3 Save-Alls
- 1 Glassene Stock Bleach Washer



More Evidence of the *Buying Preference* of Oliver United Equipment

WITHIN a short period, orders have come in for Oliver United equipment from several prominent paper mills widely separated geographically:

Plant No. 1 ordered 4—5' 5"x6' Kraft Deckers and 2—8'x12' Save-Alls.

Plant No. 2 ordered 2—8'x14' Groundwood Deckers and 3—8'x14' Broke Deckers.

Plant No. 3 ordered 4—5'5"x10' Kraft Deckers.

Plant No. 4 ordered 1—5'5"x6' Kraft Decker.

Plant No. 5 ordered 1—5'5"x6' Glassene Stock Bleach Washer.

Plant No. 6 ordered 1—8'x12' Save-All.

A record of consistently high-grade work on all kinds of stock was largely responsible for these orders. High capacity, long cloth life, high fiber recovery, low maintenance. And from another angle, filter effluent so clear that it could be re-used.

The total number of Oliver United paper mill units now runs well into the seven hundreds. When it is considered that all these installations have been made in the past few years, this total is significant. It is convincing evidence that Oliver United units are the modern equipment for paper mills to use to reduce costs to a minimum.



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News Print Production—September, 1930

The News Print Service Bureau's Bulletin No. 153 states that production in Canada during September, 1930, amounted to 195,490 tons and shipments to 193,835 tons. Production in the United States was 95,261 tons and shipments 96,048 tons, making a total United States and Canadian news print production of 290,751 tons and shipments of 289,883 tons. During September 23,767 tons of news print were made in Newfoundland and 1,000 tons in Mexico, so that the total North American production for the month amounted to 315,518 tons.

The Canadian mills produced 96,321 tons less in the first nine months of 1930 than in the first nine months of 1929, which was a decrease of 5%. The United States output was 53,663 tons or 5% less than for the first nine months of 1929. Production in Newfoundland was 25,623 tons or 14% more in the first nine months of 1930 than in 1929 and in Mexico 3,357 tons less, making a total decrease of 127,718 tons or 4%.

During September the Canadian mills operated at 66.8% of rated capacity, United States mills at 70.2% and Newfoundland mills at 103.2%. Stock of news print paper at Canadian mills totalled 62,495 tons at the end of September and at United States mills 30,879 tons, making a combined total of 93,374 tons which was equivalent to 5.5 days' average production.

NORTH AMERICAN PRODUCTION

	Canada	U. S.	Newfoundland	Mexico	Total
1930—September	195,490	95,261	23,767	1,000	315,518
Nine Months	1,897,360	985,085	214,008	10,667	3,107,320
1929—Nine Months	1,993,881	1,038,748	188,385	14,024	3,235,038
1928—Nine Months	1,732,563	1,047,602	170,726	12,185	2,963,076
1927—Nine Months	1,519,049	1,135,696	150,385	10,778	2,815,908
1926—Nine Months	1,380,722	1,259,506	133,590	9,572	2,783,390
1925—Nine Months	1,115,232	1,127,436	59,381	9,502	2,311,551
1924—Nine Months	1,015,793	1,109,246	48,552	8,622	2,182,213
1923—Nine Months	943,692	1,126,192	47,671	9,000	2,126,555

**Paper Production and Sales in Japan
August—1930**

General market conditions are still bad with paper sales falling off. Oji Paper Company is maintaining a 12% dividend, but is writing off 7,000,000 yen in losses from reserves. Bankers are now controlling the Kabafuto Kogyo Company and it is hoped to pull the company through. It is expected that the trade crisis will occur in November and if things go off smoothly then the worst will have passed.

	Production (Pounds)	Sales (Pounds)
Printing Paper, superior qual.	12,839,641	12,498,138
Printing Paper	9,954,743	9,128,776
Writing and Drawing Paper	1,052,543	1,372,242
Simili Paper	11,010,365	7,479,533
Art Paper	1,664,526	889,861
News Printing Paper	47,623,776	44,203,374
Sulphite Paper	4,354,365	3,317,524
Colored Paper	1,368,615	942,594
Wrapping Paper	10,566,953	9,384,837
Chinese Paper	1,455,657	765,207
Board Paper	6,886,025	4,828,116
Sundries	3,977,733	2,916,343
	112,754,942	97,726,545

Trip to California

A. B. Lowenstein, resident manager of the 200-ton kraft mill of the National Paper Products Company at Port Townsend, Washington, made a brief trip to San Francisco executive headquarters in late October.

**Japanese Wood Pulp Imports
August, 1930**

In the month of August the Japanese paper industry imported chemical pulp from outside sources as follows (amounts are stated in pounds): U. S. A. 1,555,867; Germany 1,836,000; Sweden, 382,933; Norway, 3,542,667; Canada, 4,861,200; France, 120,800; Denmark, 92,267; Europe, 299,466; Philippines, 30,267; Total, 12,721,467. There were no imports of mechanical pulp.

Paper Import Committee Is Active

One of the most astounding developments in the history of the United States Customs Court marked the calling for trial of the cases involving paper at the sitting of the court beginning October 14.

On that docket were 1161 cases involving paper. When the call of the docket was completed it was found that importers had abandoned 846 cases involving the importation of writing paper and papeterie. No such wholesale abandonment of importers protests has ever been known in the history of the Customs Court. In every case referred to, the importers were forced to pay an additional duty of 10 per cent because of the decorative effects on the paper. Some of these cases, due to the activity of the Import Committee of the American Paper Industry had been pending for three years.

Canadian Association Secretary Passes

Edward Beck, secretary and manager of the Canadian Pulp & Paper Association, died last month in Montreal, aged 64. Mr. Beck was a recent visitor to the Pacific Coast.

**STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS
OF AUGUST 24, 1912**

Of Pacific Pulp & Paper Industry, published monthly—except in March, when publication is semi-monthly—at Seattle, Washington, for October 1, 1930.

State of Washington, County of King,—ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Lawrence K. Smith, who having been duly sworn according to law, deposes and says that he is the business manager of the Pacific Pulp & Paper Industry, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, Consolidated Publishing Co., 71 Columbia St., Seattle, Wash.
Editor, Lloyd E. Thorpe, 71 Columbia St., Seattle, Wash.

Managing editor, (none).
Business manager, L. K. Smith, 71 Columbia St., Seattle, Wash.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

Consolidated Publishing Co., 71 Columbia St., Seattle, Wash.
Miller Freeman, Daniel L. Pratt, Lawrence K. Smith, W. E. Crosby, G. W. Cain, all of 71 Columbia St., Seattle, Wash.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in case where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

LAWRENCE K. SMITH, Business Manager.

Sworn to and subscribed before me this 6th day of October, 1930.
(Seal) RALPH H. MOULTON.
(My commission expires June, 1932.)

PACIFIC PULP & PAPER INDUSTRY

W. S. Weaver in New Los Angeles Office

William S. Weaver, formerly manager of the Bates Valve Bag Company's factory and sales office in Los Angeles, has opened an office at 307 East Third Street, Los Angeles. Mr. Weaver is representing the George & Sherrard Paper Company, a division of the International paper Company, which offers a line of multi-wall paper bags and kindred grades.

Mr. Weaver's territory covers the Pacific Coast states, the Hawaiian Islands and the Philippines. Mr. Weaver also represents the Dixie Machinery Manufacturing Company, St. Louis, manufacturers of hammer mills and grinding mills, and the Cameron Machine Company of Brooklyn, New York, manufacturers of cutting and winding equipment.

Finds Use for Sulphite Liquor

The Inland Empire Paper Company at Millwood, Washington, plans to market a greater amount of sulphate liquor for road binding purposes, thus lessening the amount of waste discharged into the Spokane River.

Dr. H. W. Nightingale, sanitary engineer of the Washington state department of health, calls attention to the company's plans in his preliminary survey of

the pollution of the Spokane River at Spokane and vicinity.

This mill is believed to be the only one in the Pacific Northwest that has found a market for this waste liquor. Plans are contemplated for the sale of even greater volume.

With changed methods of evaporation it will be practicable to concentrate the liquor and produce a more convenient and valuable product for road binding.

The paper company has been experimenting in recent years with one of the transcontinental railroads in the use of sulphite liquor for laying dust along the railroad right of way.

Receiver Suit Adjudicated

Concluding trial in the British Columbia supreme court in Vancouver, Justice Dennis Murphy awarded E. M. Mills, suing as receiver and manager of Whalen Pulp & Paper Mills Ltd., judgement for \$1745 against J. H. Palmer, Swanson Bay. The award was money which had been paid by the plaintiff five years ago to workmen employed by Palmer in stevedoring at Swanson Bay. The defendant succeeded in establishing a counter claim for \$394 in respect of his services.

IMPORTS OF PULP WOOD AND WOOD PULP INTO THE UNITED STATES BY COUNTRIES AND CUSTOMS DISTRICTS

July, 1930

Compiled by the U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce
(Figures Subject to Revision.)

[illegible]

WOOD PULP

	Mechanically Unbleached		Ground Bleached		Chemical Unbleached Sulphite		Chemical Bleached Sulphite		Chemical Unbleached Sulphate		Chemical Bleached Sulphate		Soda Pulp, Unbleached and Bleached	
	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars
COUNTRIES—														
Austria	—	—	—	—	—	—	85	5,967	—	—	60	5,967	—	—
Czechoslovakia	—	—	—	—	242	11,875	335	19,807	—	—	—	—	—	—
Finland	397	10,464	—	—	7,906	395,682	378	23,381	1,392	53,810	128	8,066	—	—
Germany	—	—	—	—	1,342	73,319	3,340	226,834	—	—	—	—	—	—
Lithuania	—	—	—	—	490	25,481	—	—	—	—	—	—	—	—
Norway	35	881	178	3,639	1,560	93,723	3,360	228,824	1,192	50,141	50	3,608	—	—
Poland and Danzig	—	—	—	—	214	7,360	—	—	—	—	—	—	—	—
Sweden	940	24,962	200	5,610	25,097	1,325,876	2,800	197,935	13,621	593,493	50	3,494	—	—
United Kingdom	—	—	—	—	220	10,062	—	—	—	—	—	—	—	—
Canada	13,595	386,106	—	—	14,103	684,875	14,930	1,071,286	4,510	280,250	785	74,171	231	16,265
Total	14,967	422,413	378	9,249	51,176	2,628,453	25,228	1,774,034	20,715	977,694	1,073	95,306	231	16,265
CUSTOMS DISTRICTS—														
Maine and New Hampshire	1,754	53,791	—	—	7,654	413,835	6,586	454,927	1,991	84,470	—	—	—	—
Vermont	1,205	33,138	—	—	1,224	63,416	1,244	88,855	3,286	222,588	723	69,038	—	—
Massachusetts	—	—	—	—	4,639	256,826	4,346	292,379	4,623	215,420	—	—	—	—
Connecticut	139	3,159	—	—	—	—	—	—	—	—	—	—	—	—
St. Lawrence	1,798	57,992	—	—	746	35,626	858	71,787	712	37,994	62	5,133	170	12,227
Rochester	—	—	—	—	—	—	35	2,013	—	—	—	—	—	—
Buffalo	801	23,914	—	—	4,825	227,370	893	72,215	88	3,007	—	—	—	—
New York	85	1,996	178	3,639	10,808	564,961	440	25,639	1,479	60,066	50	3,608	—	—
Philadelphia	1,430	48,130	—	—	8,166	416,247	1,411	101,563	2,589	90,383	110	9,461	—	—
Maryland	126	3,284	200	5,610	9,290	484,658	2,840	185,506	1,952	103,071	—	—	—	—
Virginia	50	1,301	—	—	1,175	66,397	235	15,636	821	31,659	128	8,066	—	—
Mobile	—	—	—	—	30	1,458	—	—	—	—	—	—	—	—
New Orleans	921	24,996	—	—	25	1,302	250	18,425	2,250	92,444	—	—	—	—
Los Angeles	—	—	—	—	348	17,808	—	—	500	19,931	—	—	—	—
San Francisco	—	—	—	—	708	19,029	—	—	95	2,407	—	—	—	—
Washington	59	1,982	—	—	—	—	108	3,655	—	—	—	—	—	—
Dakota	224	8,569	—	—	—	—	396	24,973	—	—	—	—	—	—
Duluth and Superior	3,800	83,495	—	—	253	4,399	120	6,879	276	11,291	—	—	—	—
Michigan	2,575	76,666	—	—	1,283	55,121	5,466	403,382	53	2,963	—	—	61	4,038
Total	14,967	422,413	378	9,249	51,176	2,628,453	25,228	1,774,034	20,715	977,694	1,073	95,306	231	16,265

Total Pulp Imports, All Grades 113,768 tons; \$5,923,414.

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Willamette Iron Building Weyerhaeuser Digesters

With the recent receipt of a large shipment of steel plate the Willamette Iron and Steel Works of Portland has begun the fabrication of six large digesters to be installed in the new 150-ton bleached sulphite pulp mill soon to be erected by the Weyerhaeuser Timber Company in connection with that company's extensive lumber mills at Longview, Washington. The digesters will be 16 feet in diameter and 52 feet high.

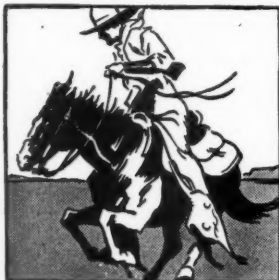
In addition the Willamette Iron Works is building 17-foot diameter by 50-foot height acid tanks for Weyerhaeuser.

Of jobs just being completed Manager Ray Smythe of the Willamette company points to the completion last month of a 19x58-foot digester for the remodeled 300-ton specialty paper mill of the Crown Willamette Paper Company at Camas, Washington.

The Willamette company has also recently built and installed some of its new flat screens in a number of Pacific Northwest mills.

Manager Smythe points out that the new and growing industry of the Pacific Northwest is contributing its share of new methods and equipment. He states:

"There are probably more developments being made in the pulp and paper machinery by manufacturers in the Northwest than in any other part of the United States. It is here that the new pulp mills are being built. Consequently new ideas in equipment have an excellent chance for being used. Pulp and paper engineers throughout the country are recognizing that the Pacific Northwest is the ultimate home of most of the paper manufacturing business, and it is only reasonable that manufacturers of equipment here should look ahead and develop new ideas in a practical manner."



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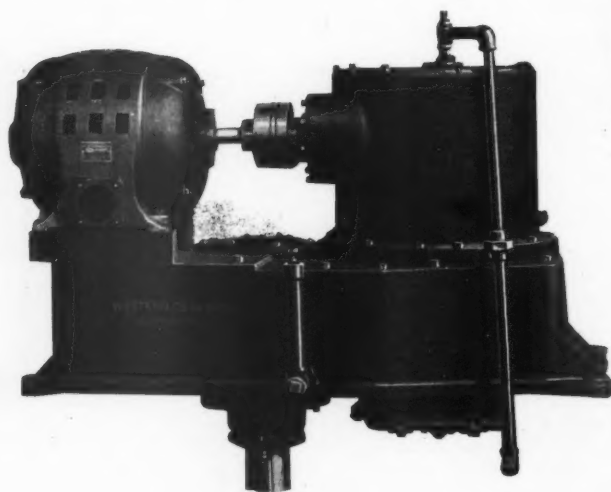
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